

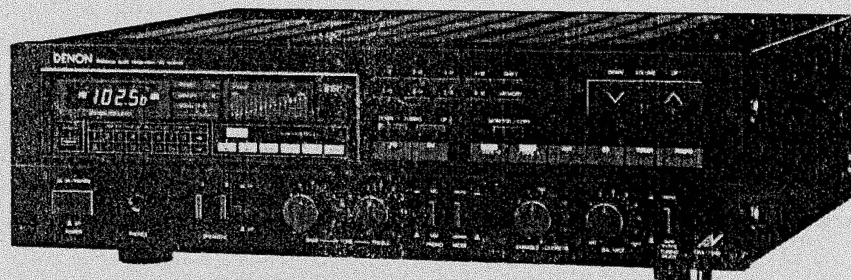
SERV. 33484

DENON

Hi-Fi AV RECEIVER

SERVICE MANUAL MODEL DRA-75VR

FOR EUROPEAN, AUSTRALIA
AND OTHER MODELS



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NIPPON COLUMBIA CO., LTD.

SPECIFICATIONS

AMPLIFIER SECTION

Rated Output Power
(Both Channels driven):

100 W + 100 W
(4 ohms 1 kHz T.H.D. 1%)
65 W + 65 W (8 ohms
20 Hz ~ 20 kHz T.H.D. 0.015%)
[65 watts per channel minimum
RMS, both channels driven at 8
ohms from 20 Hz ~ 20 kHz no
more than 0.015% total harmonic
distortion]

Power Bandwidth (IHF):

5 Hz ~ 40 kHz (T.H.D. 0.05% both
ch. driven at 8 ohms)

Total Harmonic Distortion

(20 Hz to 20 kHz):

—3 dB power into 8 ohms 0.0095%

Intermodulation Distortion

(60 Hz: 7 kHz,
4: 1 SMPTE):

Rated power into 8 ohms 0.025%

Output Impedance:

0.1 ohm (at 1 kHz, 8 ohms)

Frequency Response:

PHONO RIAA Standard Curve

(Recording Output)

MM 20 Hz ~ 20 kHz ± 0.5 dB

MC 50 Hz ~ 20 kHz ± 0.5 dB

VCR/TAPE2, AUX, CD, VIDEO/TAPE1

20 Hz ~ 50 kHz ± 1.5 dB

Input Sensitivity and

Impedance:

PHONO

MM 2.5 mV 47 k ohms

MC 0.25 mV 100 ohms

VCR/TAPE2, AUX, CD, VIDEO/TAPE1

150 mV 47 k ohms

Maximum Input Level

(at 1 kHz):

PHONO MM 150 mV

MC 15 mV

Signal to Noise Ratio

(IHF-A):

PHONO

MM 88 dB at 5.0 mV input

MC 68 dB at 0.5 mV input

VCR/TAPE2, AUX, CD, VIDEO/TAPE1

98 dB at 150 mV input

Tone Controls:

BASS ±8 dB at 100 Hz

TREBLE ±8 dB at 10 kHz

Loudness, Control Effect:

VARIABLE LOUDNESS 10

positions, 50 Hz/10 kHz,

+10 dB/+5 dB

TUNER SECTION

[FM]

Receiving Range:

87.5 MHz ~ 108 MHz

[87.5 MHz ~ 108 MHz

[(100 kHz ~ 50 kHz separation)]

Usable Sensitivity:

0.8 μV (9.3 dBf)

S/N 50 dB Quieting

Sensitivity

(μV at 75 ohms and

0 dB at 10 ~ 15 W):

MONO 1.5 μV (14.7 dBf)

[1.8 μV (16.4 dBf)]

STEREO 20 μV (37.3 dBf)

Signal to Noise Ratio

(IHF-A):

MONO 82 dB

STEREO 80 dB

Total Harmonic Distortion:

MONO 0.1% at 1 kHz

STEREO 0.3% at 1 kHz

[MONO 0.07% at 1 kHz]

[STEREO 0.12% at 1 kHz]

Capture Ratio:

1.2 dB

Image Rejection:

75 dB

[40 dB]

AM Suppression:

60 dB

Selectivity:

70 dB (±400 kHz)

[60 dB (±400 kHz)]

Frequency Response:

20 Hz ~ 15 kHz +0.3 dB

Stereo Separation:

40 dB at 1 kHz

[50 dB at 1 kHz]

[AM]

Receiving Range:

522 kHz ~ 1611 kHz

[520 kHz ~ 1710 kHz

(10 kHz separation)

or 522 kHz ~ 1611 kHz

(9 kHz separation)

Usable Sensitivity:

18 μV

Signal to Noise Ratio:

55 dB

VIDEO SECTION

Video Input/Output

Input Terminal VIDEO, IN: 1 Vp-p/75 ohm

Output Terminal OUT,

MONITOR: 1 Vp-p/75 ohm

Frequency Response:

5 Hz ~ 6 MHz ± 1.5 dB

GENERAL

Power Supply:

AC 220 V or 240 V/50 Hz

[AC 110/120/220/240 V, 50/60 Hz]

[Multiple (120 V Preset)

140 W

[113 W]

Power Consumption:

[SWITCHED 100 W/

[UNSWITCHED 250 W]

Power Outlets:

Dimensions:

434 mm (17-3/32") W x 137 mm

(5-1/16") H x 386 mm (15-13/64") D

[434 mm (17-3/32") W x 137 mm

[(5-1/16") H x 378 mm (14-7/8") D]

Weight:

8.9 kg (19 lbs. 10 oz)

REMOTE CONTROL UNIT

RC-75

Remote control system:

Infrared pulse system

Power supply:

3 V DC Two SUM-4 (standard size

four) dry cell batteries

External dimensions:

60 (2-23/64") W x 150 (5-29/32") H

x 17 (43/64") D mm

Weight:

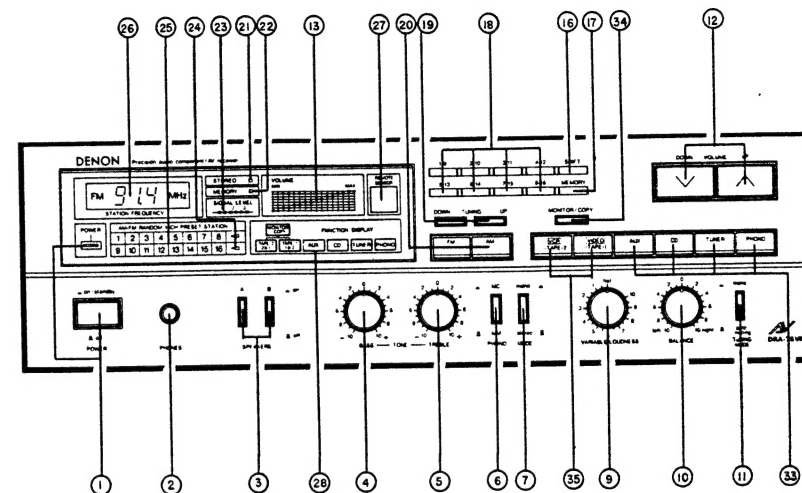
87 g (Includes batteries)

(about 3 oz)

[] is for Asian (EP1) model

Design and specifications are subject to change without prior notice.

NAMES AND FUNCTIONS OF PARTS

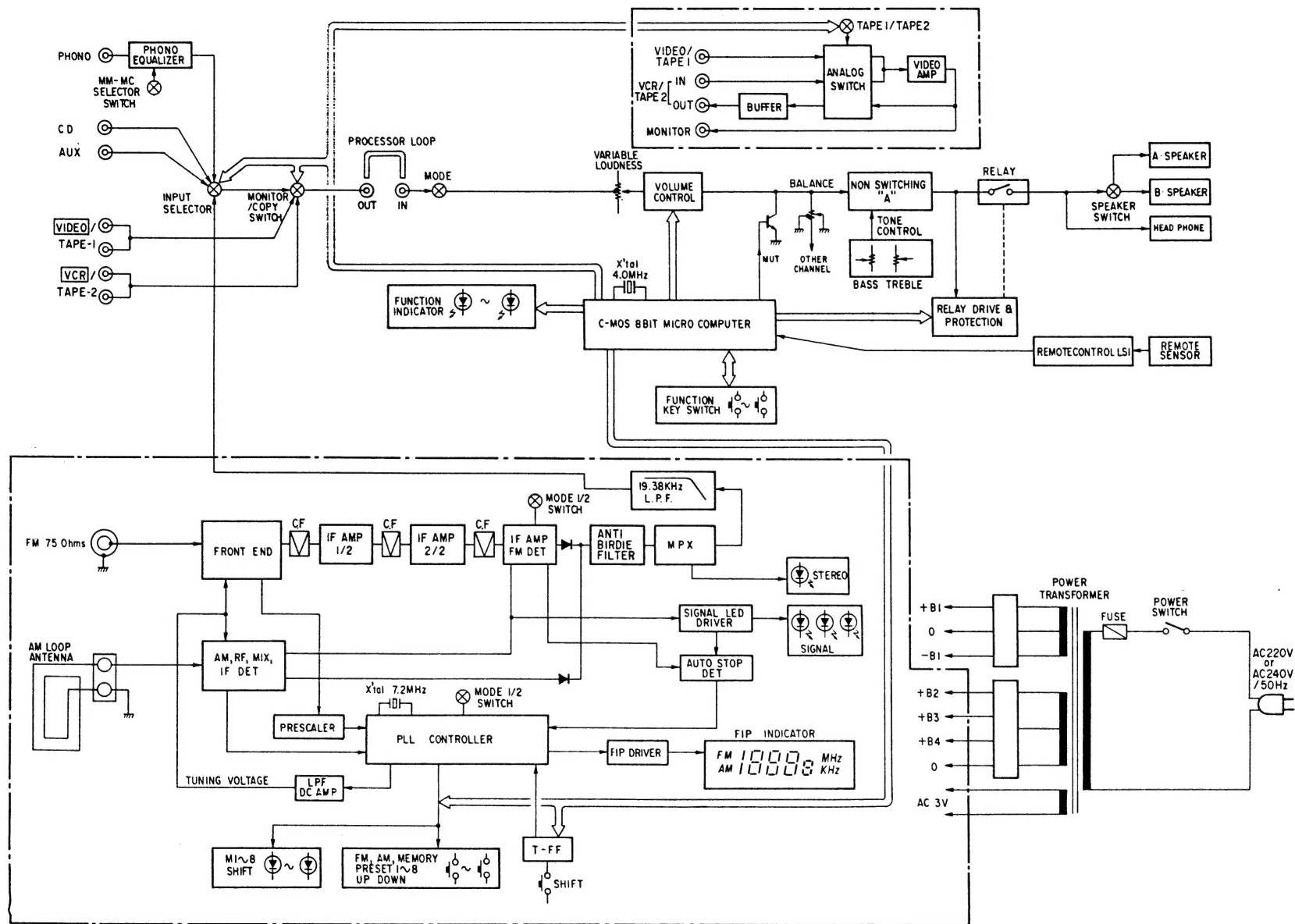


- ① POWER and LED indicator
(Power supply button and LED indicator)
- ② PHONES (Headphone jack)
- ③ SPEAKERS (Speaker select switches)
• A, • B
- ④ BASS (Bass control)
- ⑤ TREBLE (Treble control)
- ⑥ PHONO (Cartridge select switch)
• MC, • MM
- ⑦ MODE (Mode button)
• stereo, • mono
- ⑧ —
- ⑨ VARIABLE LOUDNESS (Loudness control)
- ⑩ BALANCE (Balance control)
- ⑪ TUNING MODE (FM mode, muting and tuning mode
switch)
• auto/muting, • mono
- ⑫ VOLUME (Volume control)
• UP, • DOWN
- ⑬ VOLUME INDICATOR
- ⑭ —
- ⑮ —
- ⑯ SHIFT (Shift button)
- ⑰ MEMORY (Memory button)

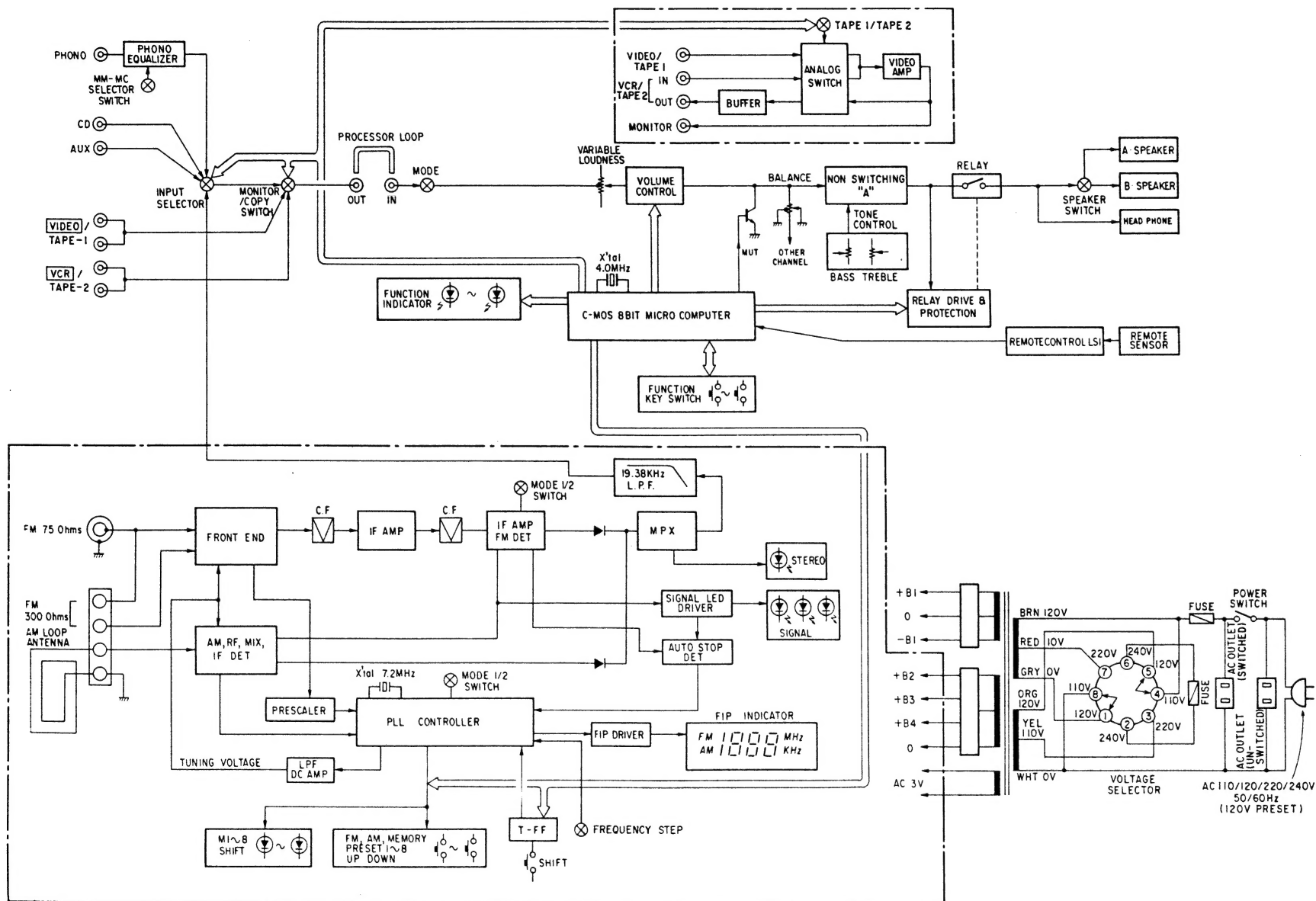
- ⑱ PRESET CHANNEL 1 ~ 16 (Press station buttons)
- ⑲ TUNING (Tuning buttons)
• UP, • DOWN
- ⑳ BAND SELECT (Band selector buttons)
• FM, • AM
- ㉑ STEREO (Stereo indicator)
- ㉒ MEMORY INDICATOR
- ㉓ SIGNAL (Signal-strength indicator)
- ㉔ SHIFT INDICATOR
- ㉕ PRESET CHANNEL INDICATOR
- ㉖ FREQUENCY INDICATOR
- ㉗ REMOTE CONTROL PHOTOSENSITIVE WINDOW
- ㉘ FUNCTION INDICATOR
- ㉙ —
- ㉚ —
- ㉛ —
- ㉜ INPUT SELECTOR (Input select buttons)
• PHONO, • TUNER, • CD, • AUX.
- ㉝ MONITOR/COPY (VCR and tape monitor/copy
switch)
- ㉞ VIDEO/TAPE SELECTOR (Video/tape selector
switch)
• VIDEO/TAPE-1, • VCR/TAPE-2

NOTE: The following codes correspond to the appropriate models.
EP1 for Asia, E2 for Europe, EA for Australia, New Zealand, EK for U.K., EU for U.S.A. and
EC for Canada.
This Service Manual is prepared based on E2 Black Version.

BLOCK DIAGRAM (for E2 and EA)



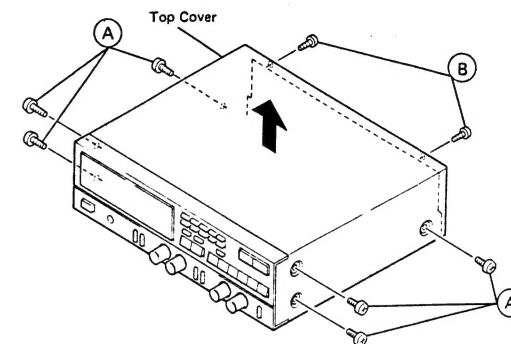
(for EP1)



REMOVAL OF EACH SECTION

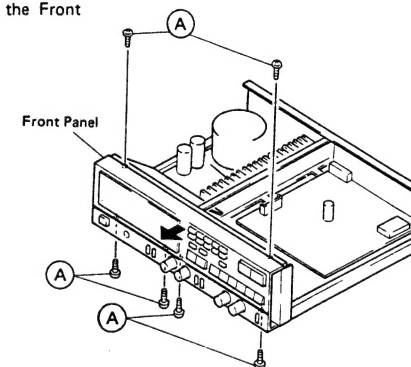
1. Top Cover

Remove 6 screws (A), 2 screws (B), and lift the Top Cover upward to detach.



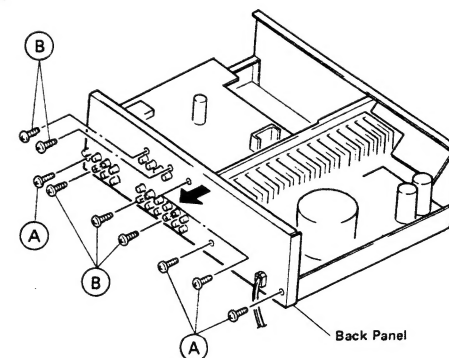
2. Front Panel

Remove 7 screws (A) and draw out the Front Panel frontward to detach.



3. Back Panel

Remove 4 screws (A), 6 screws (B), and pull out the Back Panel backward to dismantle.



ANTENNA INSTALLATION (for E2 and EA)**• FM ANTENNA**

T-type indoor antenna (300 ohms) can be used inside wooden houses for local FM stations and strong signals. Orient the T-shaped part for optimum reception and mount the antenna on the wall or ceiling. (FM indoor antennas may not consistently ensure stable reception, due to environment changes. In such cases use an FM indoor antenna temporarily until an outdoor antenna is installed.)

75 ohms coaxial cable (3C-2V, 5C-2V) is preferable to obtain better performance of the tuner.

(To use of a 300 ohm FM outdoor antenna, connect to the 300 ohm terminals of the attached FM antenna adapter.)

• AM ANTENNA

Attach the accessory AM loop antenna to the antenna holder on the back panel.

Connect the leads to AM and GND terminal. Use this terminal also for an outdoor antenna.

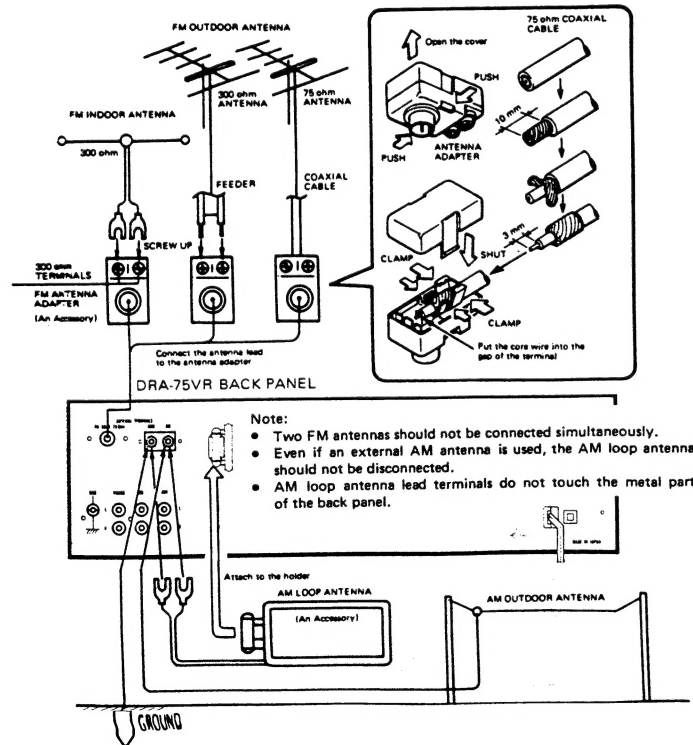
Orient the loop antenna horizontally to obtain optimum reception. Where broadcast stations are distant and only weak signals are received, or where signals are blocked by obstacles, install an AM outdoor antenna.

• GROUNDING

If there is reception noise, use of grounding wire is recommended.

Connect a thick insulated wire to the "GND" terminal, and attach the unconnected bare end to a metal water pipe, grounding rod, or grounded copper plate.

* Never connect the grounding wire to a gas pipe. This could cause fire or explosion.

**ANTENNA INSTALLATION (for EP1)****• FM ANTENNA**

The accessory T-type indoor antenna (300 ohm) can be used inside wooden houses for local FM stations and strong signals. Orient the T-shaped part for optimum reception and mount the antenna on the wall or ceiling. FM indoor antennas may not consistently ensure stable reception, due to environment changes. In such cases an FM outdoor antenna is necessary for best reception.

Either 300 ohm twin lead (cable or 75 ohm coaxial cable may be used for outdoor antenna. But, coaxial cable is preferable when electrical interferences is a problem.

* Connect either an indoor T-type antenna or an outdoor antenna but not both.

• AM ANTENNA

Attach the accessory AM loop antenna to the antenna holder on the back panel.

Connect the leads to AM and GND terminal. Use this terminal also for an outdoor antenna.

Orient the loop antenna horizontally to obtain optimum reception. Where broadcast stations are distant and only weak signals are received, or where signals are blocked by obstacles, install an AM outdoor antenna.

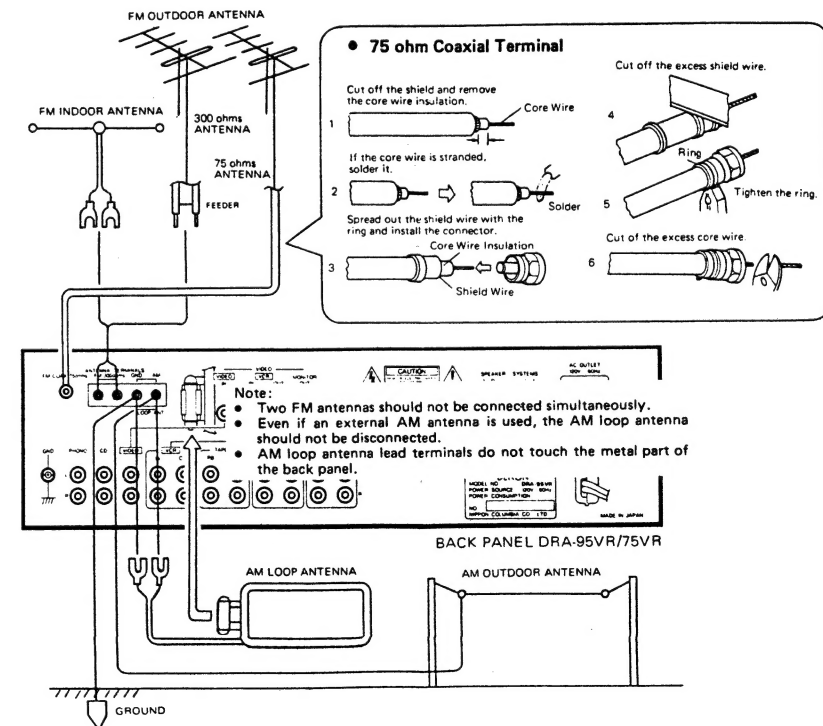
* Never disconnect the AM loop antenna leads when use an outdoor antenna.

• GROUNDING

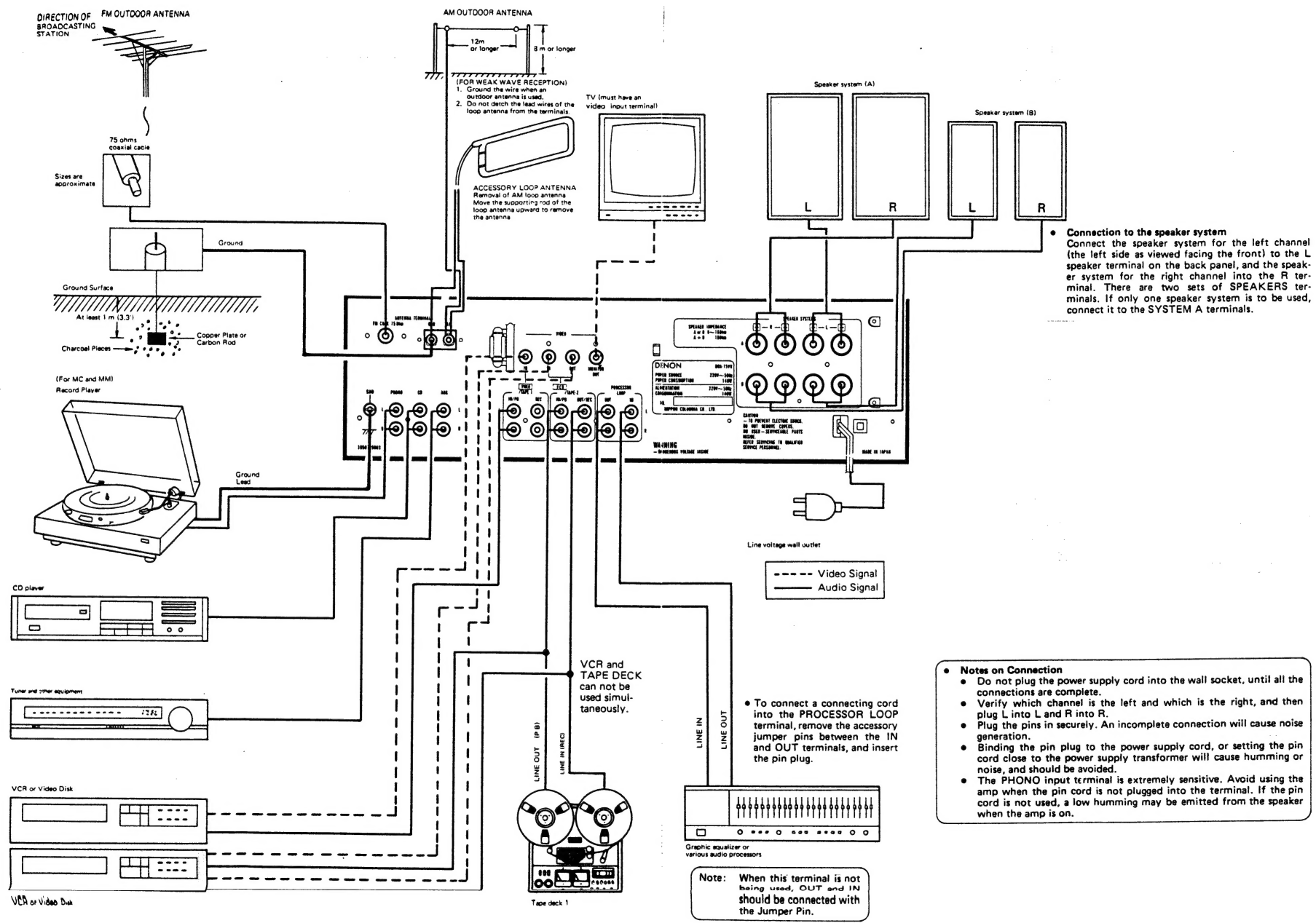
If there is reception noise, use of grounding wire is recommended.

Connect a thick insulated wire to the "GND" terminal, and attach the unconnected bare end to a metal water pipe, grounding rod, or grounded copper plate.

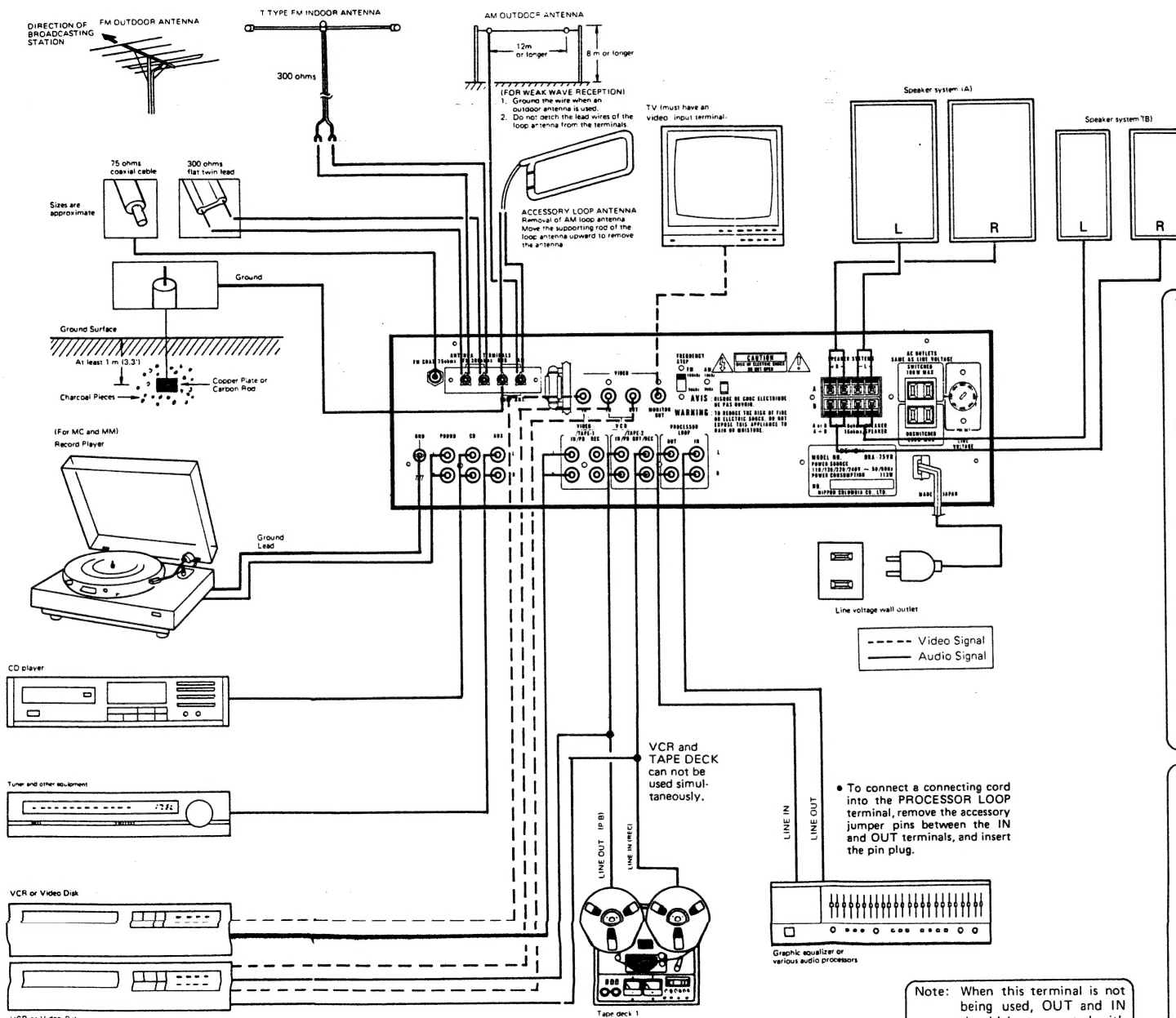
* Never connect the grounding wire to a gas pipe. This could cause fire or explosion.



CONNECTIONS (for E2 and EA)



CONNECTIONS (for EP1)



● **Connection to the speaker system**

Connect the speaker system for the left channel (the left side as viewed facing the front) to the L speaker terminal on the back panel, and the speaker system for the right channel into the R terminal. There are two sets of SPEAKERS terminals. If only one speaker system is to be used, connect it to the SYSTEM A terminals.

1. AC OUTLETS . . . For Asia model

AC outlets are used for connecting amplifier component units, such as tuner, turntable, tape deck, etc.

● **SWITCHED (Capacity: 100 W):**

This outlet is turned on/off when main power switch is turned on/off.

● **UNSWITCHED (Total capacity: 250 W)**

These outlets are always ON whether power switch is on or off.

2. SETTING THE FREQUENCY STEP

Set the FREQUENCY STEP switch as described below.

● **In the U.S.A. and Canada — set the switch to the upper side.**

With this setting, the frequency varies in 100 kHz steps in the range of 87.5 to 108.0 MHz (FM) and in 10 kHz steps in 520 to 1710 kHz (AM).

● **Elsewhere — set the switch to the lower side.**

With this setting, the frequency varies in 50 kHz steps in the range of 87.50 to 108.00 MHz (FM) and in 9 kHz steps (AM) in 522 to 1611 kHz (AM).

Note: Don't change the switch setting with power on.

If the FREQUENCY STEP switch is changed with power on, turn off and on the unit again to reset the circuit.

3. SETTING THE LINE VOLTAGE

● **The customer can set the VOLTAGE SELECTOR KNOB on the back panel for appropriate line voltage by using a screwdriver.**

● **Do not use excessive force in setting the VOLTAGE SELECTOR KNOB — you may damage it.**

● **If the VOLTAGE SELECTOR KNOB does not turn smoothly, call qualified service personnel.**

● **Notes on Connection**

● **Do not plug the power supply cord into the wall socket, until all the connections are complete.**

● **Verify which channel is the left and which is the right, and then plug L into L and R into R.**

● **Plug the pins in securely. An incomplete connection will cause noise generation.**

● **Do not use the AC OUTLETS terminals to provide power for a hair drier or other electrical appliance after the power supply cords of the audio components have been plugged in.**

● **Binding the pin plug to the power supply cord, or setting the pin cord close to the power supply transformer will cause humming or noise, and should be avoided.**


● **The PHONO input terminal is extremely sensitive. Avoid using the amp when the pin cord is not plugged into the terminal. If the pin cord is not used, a low humming may be emitted from the speaker when the amp is on.**

Note: When this terminal is not being used, OUT and IN should be connected with the Jumper Pin.


• **AUDIO SECTION**

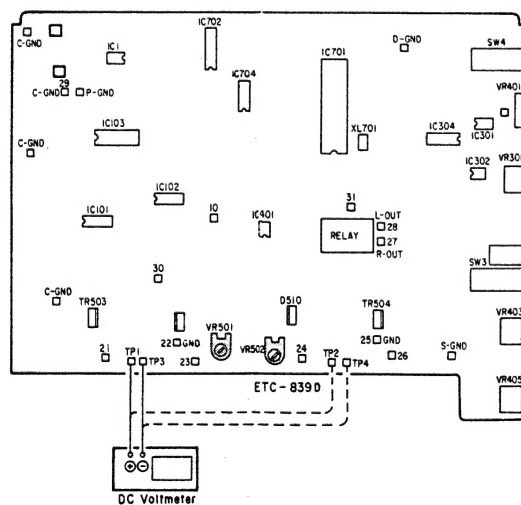
1. IDLING CURRENT

- **Setup**

1. Lay the unit at an ordinary position away from a direct current from a cooler or fan. Do the adjustment at a temperature between 15°C and 30°C.
2. Set controls as follows.
 - POWER SWITCH → off ()
 - VOLUME CONTROL → fully counterclockwise.
 - SPEAKER Terminals → open: do not connect the speakers, dummy load etc.

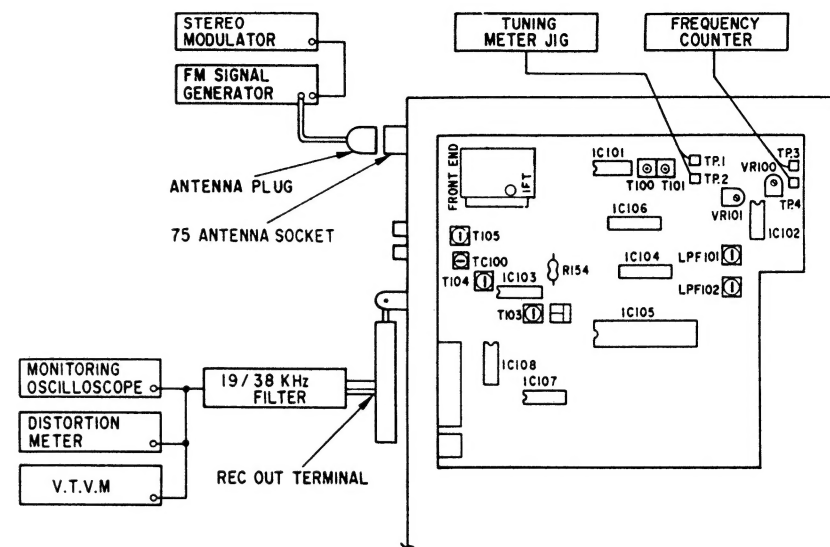
- **Adjustment**

1. Remove Top cover. And then connect DC Voltmeter to Test points of ETC0839D or ETC0839 [POWER UNIT].
2. Connect Power cord to AC outlet, and turn Power Switch "on" (). Within 2 seconds turn VR501 (Lch) and VR502 (Rch) clockwise so that the DC voltmeter reads 10 ± 0.1 mVDC
3. Then after 2 minutes warmup adjust VR501 and VR502 so that the DC Voltmeter reads 10 ± 0.5 mV
4. And after 15 minutes warmup adjust VR501 and VR502 so that the DC Voltmeter reads 7 ± 3 mV

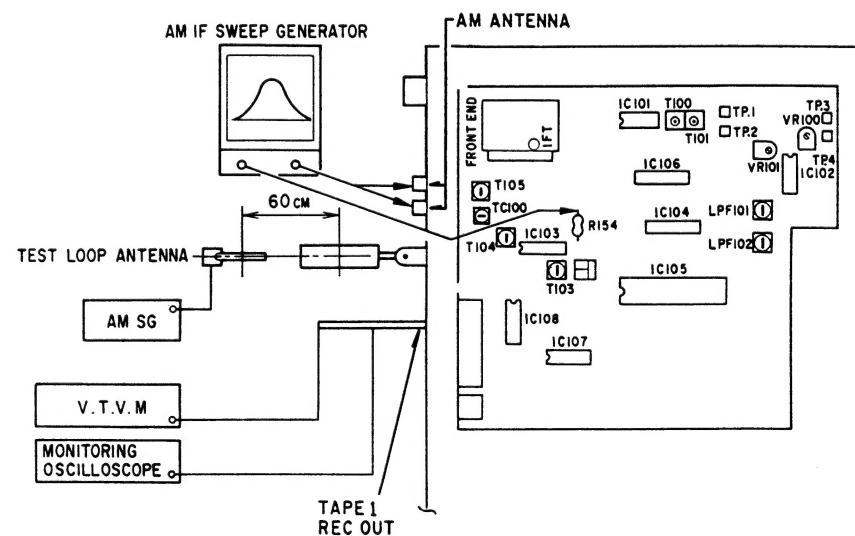


INSTRUMENT HOOK-UP DIAGRAM

FM



AM



TUNER SECTION

INSTRUMENT CONNECTIONS AND SETTING

Preparation

1. Connection of Measuring Equipment

FM

- (1) Connect the output end of the Stereo/Mono FM signal generator to the antenna terminal (75 ohm) of the unit. Set the stereo modulator to the following conditions:

L + R: 67.5 kHz deviation 1 kHz (internal modulation frequency)

Pilot: 7.5 kHz deviation

- (2) Connect a filter jig of 19 kHz to the recout terminal L of the unit. Then, connect the output of the filter jig to a distortion meter, the output of which is in turn connected to an oscilloscope for monitoring.

- (3) Connect tuning jigs to TP. 1 and 2.

- (4) Connect frequency counters to TP.3, TP.4.

AM

- (1) The AM signal generator should be set as follows:

Modulation: 30%, modulation frequency: 400 Hz

(Antenna input signal level: about 80 dB/m).

FM/MPX ALIGNMENT

Table 1

| Step | Alignment Item | Tuning Frequency Setting | Input | | | | | Output | | Adjustment | | Remarks |
|------|---------------------------|--|-----------------------------------|-----------|-------------|--|------------------|-------------------|------------------------|------------------|------------------------|--|
| | | | Type | Frequency | Input Level | Modulation | Coupling | Type | Connect to | Points | Adjust to | |
| 1 | 76 kHz | 98 MHz | FM Standard Signal Generator Mono | 98 MHz | 60 dBμ | 1 kHz 75 kHz Dev. | Antenna Terminal | Frequency Counter | (+) T.P.4 (-) T.P.3 | VR100 | 76 kHz ± 50 Hz | Function: FM Tuning mode: Auto (Front Panel) |
| 2 | Tuning Center | 98 MHz | FM SSG, Mono | 98 MHz | 60 dBμ | None | Antenna Terminal | Center Meter | T.P. 1, 2 | T-100 | Center of Tuning Meter | Function: FM Tuning mode: Mono |
| 3 | Distortion (Mono) | 98 MHz | FM SSG, Mono | 98 MHz | 60 dBμ | 1 kHz 75 kHz Dev. | Antenna Terminal | Distortion Meter | Output Terminal (L) | T-101 | Minimum Distortion | Function: FM Tuning mode: Mono |
| 4 | Distortion (Stereo) | 98 MHz | FM SSG, Stereo (L) | 98 MHz | 60 dBμ | Main: 1 kHz L-ch 67.5 kHz Dev. Pilot: 7.5 kHz Dev. | Antenna Terminal | Distortion Meter | Output Terminal (L) | IFT on Front End | Minimum Distortion | Function: FM Tuning mode: Auto |
| 5 | Noise Center & Distortion | Repeat 2, 3 and 4 to obtain minimum distortion and at the same time center meter should read center condition. | | | | | | | | | | |
| 6 | Separation | 98 MHz | FM SSG, Stereo (L) | 98 MHz | 60 dBμ | Main: 1 kHz L-ch 67.5 kHz Dev. Pilot: 7.5 kHz Dev. | Antenna Terminal | Distortion Meter | Output Terminal (L) | VR101 | Max. Separation | Function: FM Tuning mode: Auto |

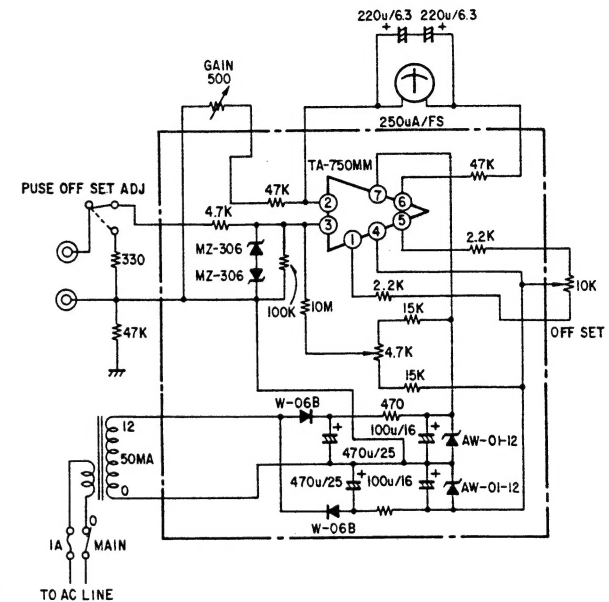
AM ALIGNMENT

() is for Asian (EP1) model.

Table 2

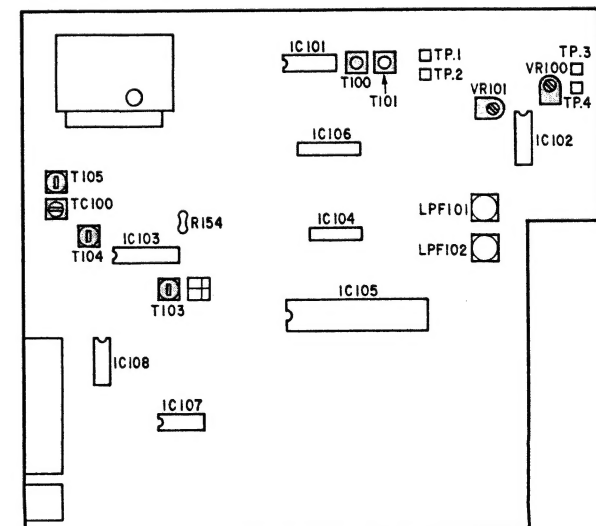
| | | | | | | | | | | | | |
|---|-----------------------|-----------------|----------|-----------------|---------------------------------------|------------|------------------|----------------|---------------------|--------|--|---|
| 1 | IF | — | IF Sweep | — | Input Level is not to saturate A.G.C. | — | Antenna Terminal | Oscilloscope | R154 | T-103 | Maximum Height and Best Symmetry Curve | Function: AM Center of Wave Form: 450 kHz |
| 2 | Tracking Alignment AM | 603 kHz (600) | AM SSG | 603 kHz (600) | Input Level is not to saturate A.G.C. | 400 Hz 30% | Loop Antenna | Audio V.T.V.M. | Output Terminal (L) | T-105 | Maximum Output | Function: AM |
| | | 1404 kHz (1500) | AM SSG | 1404 kHz (1500) | Input Level is not to saturate A.G.C. | 400 Hz 30% | Loop Antenna | Audio V.T.V.M. | Output Terminal (L) | TC-100 | Maximum Output | Function: AM |

Tuning Meter Jig



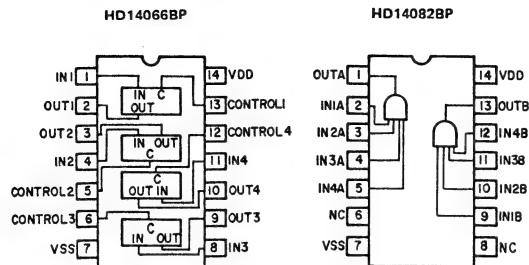
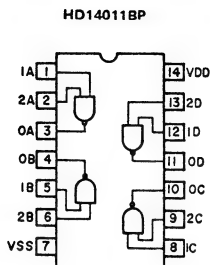
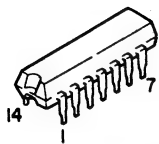
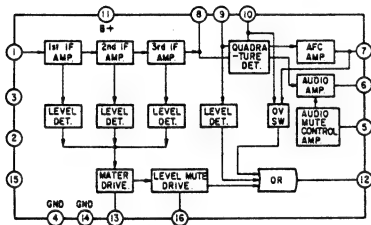
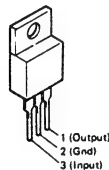
ROUGH DIAGRAM OF ADJUSTMENT POINT ETC0841D or ETC0841E Tuner Unit

Component Side

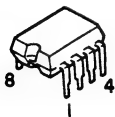


SEMICONDUCTORS

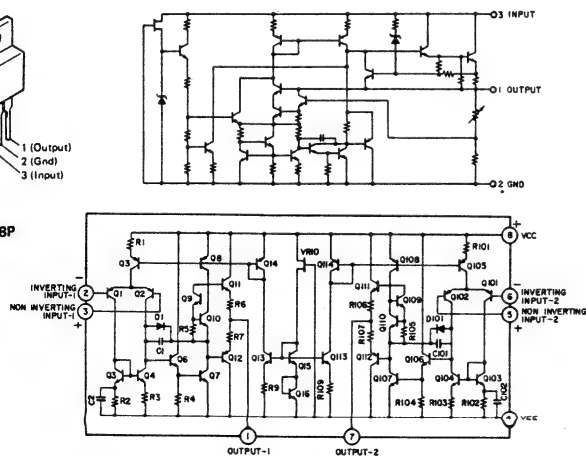
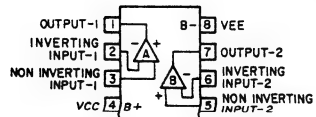
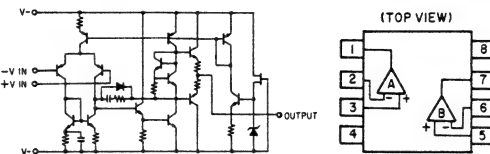
• IC

HD14011BP
HD14066BP
HD14082BP
(Hitachi)HA11225
(Hitach)L78M05ML
(JRC)

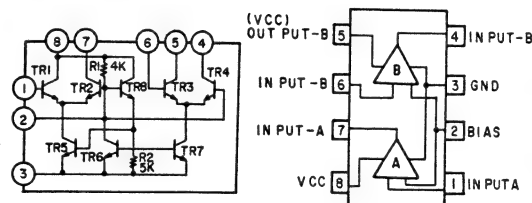
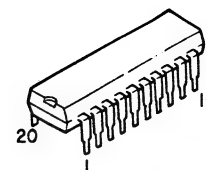
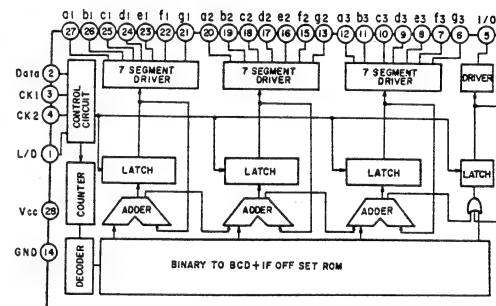
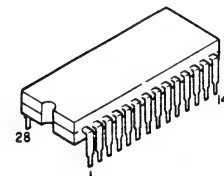
M-5218P (Mitsubishi)



M-5218P

NJM2043DD (JRC)
NJM2068DD (JRC)
LA1222 (Sanyo)NJM2043DD
NJM2068DD

LA1222

LA1245
(Sanyo)TD6301AP
(Toshiba)

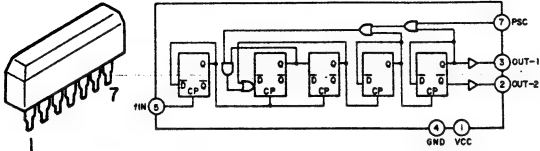
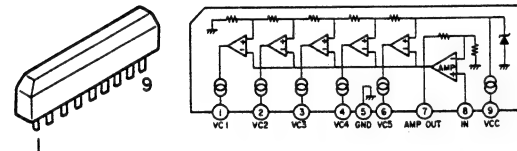
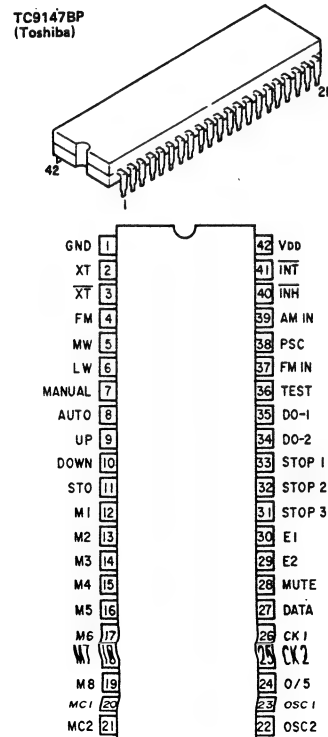
FUNCTIONS OF TERMINALS (TD6301AP)

| Pin No. | Name | Function |
|---------|------------|---|
| 1 | L/D | Output status select input terminal. Input terminal for selecting output status by the indicator (LED, FL, LCD). |
| 2 | Data | Receiving frequency data input terminal. Input serially by the system controller LSI. |
| 3, 4 | CK1 CK2 | Received frequency data input control timing input terminal. Transferred simultaneously with data by the system controller LSI. |
| 5 | 1/0 | Segment drive output terminal. 100 MHz-unit display at FM time. Only 1 pin is used for output because of 1 to 0 in both FM/AM. |

| Pin No. | Name | Function |
|-----------|--------------------------------|---|
| 6~12 | a ³ ~g ³ | 7-segment drive output terminal. 10 MHz-unit display at FM time. 100 kHz-unit display at AM time. |
| 13, 15~20 | a ² ~g ² | 7-segment drive output terminal. 1 MHz-unit display at FM time. 10 kHz-unit display at AM time. |
| 21~27 | a ¹ ~g ¹ | 7-segment drive output terminal. 100 kHz-unit display at FM time. 1 kHz-unit display at AM time. |
| 14, 28 | Vcc GND | Supply voltage applying terminal. |

FUNCTIONS OF TERMINALS (TD6104P)

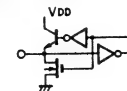
| Pin No. | Name | Functions |
|---------|----------|---|
| 5 | f_{IN} | FM station signal input terminal Frequency range 60 – 140 MHz Input level 75 – 300 mVrms |
| 3 | OUT-1 | Dividing an input signal into 1/30 or 1/32 through dividing output terminal f_{IN} . Output level 0.5(V)MIN |
| 2 | OUT-2 | OUT 1 inverted signal output. Because of open emitter system, if it is to be used. External resistor is necessary. Open in general. |
| 7 | PSC | Dividing value select control terminal 1/32 when $V_{PCC} \geq 2(V)$, 1/30 when $V_{PCC} \leq 1(V)$ |
| 6 | C | for bias circuit. Connect C = 2200 pF (approx. between the unit and the GND.) |
| 1 | Vcc | Power terminal Vcc = 5V |
| 4 | GND | Icc = 5 mA (standard), 10 mA (max.) |

TD6104P
(Toshiba)LB1403N
(Sanyo)TC9147BP
(Toshiba)

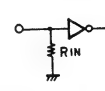
| Pin No. | Symbol | Assignment | Function | Remark |
|---------|------------------|-------------------------------------|---|----------------------------|
| 2 | XT | X-tal oscillator terminal | Connect reference frequency X-tal 7.2 MHz | Internal feedback resistor |
| 3 | XT | | | |
| 4 | FM | FM band specific input | | |
| 5 | MW | MW band specific input | Mutual reset type FM/MW/LW band switching | A |
| 6 | LW | LW band specific input | | |
| 7 | Manual | Manual tuning mode specific input | Mutual reset type switch manual UP/DOWN and auto search mode | A |
| 8 | Auto | Auto tuning mode specific input | | |
| 9 | UP | UP key input | UP/DOWN selection | B |
| 10 | DOWN | DOWN key input | | |
| 11 | STO | Memory store command input | Set to preset memory write | A |
| 12~19 | M1~M8 | Preset memory channel command input | With MC1, MC2, write/read 16 preset stations | A |
| 20 | MC1 | Memory control input | Set FM/AM (MW+LW) preset each 8 stations out of 16 stations to fixed ones, or FM + MW + LW 3 band, 16 stations random selection. | C |
| 21 | MC2 | | | |
| 22 | | Clock for AM scanning | Determines AM sensing speed | — |
| 23 | | Clock for FM scanning | Determines FM scanning speed | — |
| 24 | O/5 | 50 kHz output | 50 kHz step for South Africa and Europe area. 50 kHz: H level | D |
| 25 | CK2 | Rx frequency data | Output serial data and timing clock for Rx frequency digital display. CK1 output is common with Beep. | D |
| 26 | CK1 | Serial output | | |
| 27 | DATA | | | |
| 28 | MUTE | Mute signal output | Mute: "H" level | D |
| 29 | E2 | Area command input | Japan, America, Europe, South Africa, Area command. | E |
| 30 | E3 | | | |
| 31 | STOP3 | AM, IF signal input | When AM Rx, counts IF 450 kHz and stops auto search | F |
| 32 | STOP2 | Auto search stop signal input | When "H" is applied to STOP1 input, if "H" is applied to STOP2, stops auto search. Also, ARI is used for Stereo Station identification. | E |
| 33 | STOP1 | Scanning speed slow input | Reduces auto search scanning speed to 1/2 when "H" level applied. | E |
| 34 | DO-2 | Phase comparator output | Outputs 2 tristate buffer in parallel from a comparator | G |
| 35 | DO-1 | | | |
| 36 | TEST | TEST port | "H": test mode | B |
| 37 | FM _{IN} | FM programmable counter input | Connects pre-scaler TD6104P output | F |
| 38 | PSC | Pre-scaler control output | Controls frequency divider 1/30, 1/32 of pre-scaler TD6104P | D |
| 39 | AM _{IN} | AM programmable counter input | Inputs AM local oscillation signal | F |
| 40 | INH | Inhibit input | "H" level: normal operation "L" level: inhibit | E |
| 41 | INT | | "H" level: normal "L" level: initialize | E |
| 42 | VDD | Power supply | Apply 5 ± 0.5 V. Backup can be reduced to 2 V | — |
| 1 | GND | | | |

I/O equivalent circuit

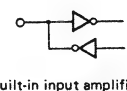
A. Bipolar Transistor, internal LED driver



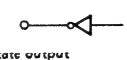
B. Pull down resistor C-MOS input



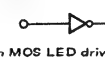
C. C-MOS I/O



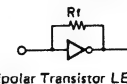
D. C-MOS output



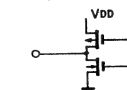
E. C-MOS input (no pull up/down resistor)



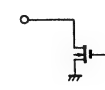
F. Built-in input amplifier



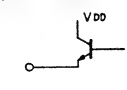
G. Tristate output

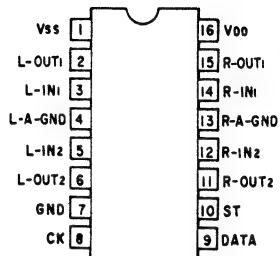
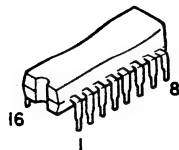


H. Nch MOS LED driver output

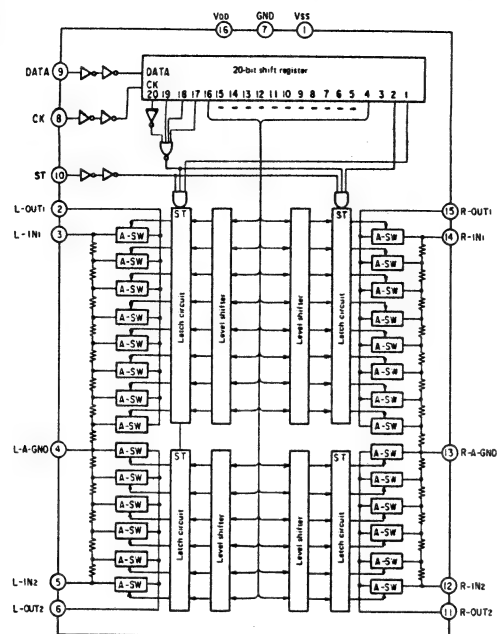


I. Bipolar Transistor LED driver output



TC9176P
(Toshiba)

TC9176P



| Pin No. | Symbol | Function | Remark |
|--------------|--|---|---|
| 2 15 | L-out ₁ R-out ₂ | 10 dB step attenuator output Attenuates signal applied to IN in 10 dB step: 0 ~ 70 dB in 8 steps | (L/R) 2/15 |
| 3 14 | L-in R-in | 10 dB attenuator input | 3/14 |
| 4 13 | A-GND | AC ground | 4/13 |
| 5 12 | L-in ₂ L-in ₂ | 2 dB attenuator input | 5/12 |
| 6 11 | L-out ₂ R-out ₂ | 2 dB attenuator output Attenuates signal applied to IN in 2 dB step: 0 ~ 8 dB in 5 steps | 6/11 |
| 9 | DATA | Attenuation, channel selection data input. Comprises 20 bit, and applied as CK signal. | Input inverter for low threshold value. |
| 8 | CK | Clock input Clock input to take in DATA port data | |
| 10 | ST | Strobe input Latches DATA, attenuation taken from CK port, channel selection data, by turning ST to "H" level. When "H" is not applied to the port, previous data remain as are. | |
| 16 7 1 | VDD GND VSS | (+) B Terminal Ground Terminal (-) B Terminal | |

Function

Attenuation Setting

Input optional attenuation data to DATA, CK, ST ports.

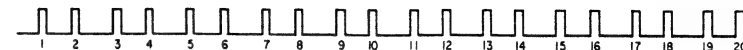
Data comprise 20 bit.

(TC9176P has no loudness control, and 3rd bit is always at "L" level)

TC9176P

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|------|------|------|-----|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|
| Lch | Rch | "0" | 0dB | -2dB | -4dB | -6dB | -8dB | 0dB | -10dB | -20dB | -30dB | -40dB | -50dB | -60dB | -70dB | "0" | "0" | "0" | "1" |
|-----|-----|-----|-----|------|------|------|------|-----|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|

CK



e.g. when data (11001000001000000001) entered, it result in -22 dB attenuation.

Data bit 1, 2 : select Lch, Rch

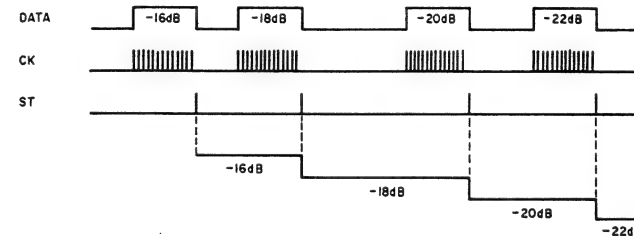
Bit 4 ~ 8 : 2 dB step attenuator setting

Bit 9 ~ 16 : 10 dB step attenuator setting

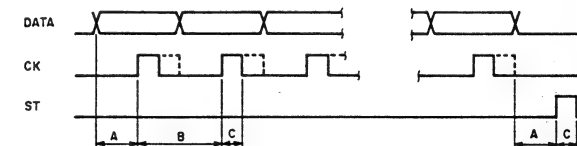
Bit 17 ~ 20 : chip select bit, (0001) is select mode, other than (0001) is inoperative.

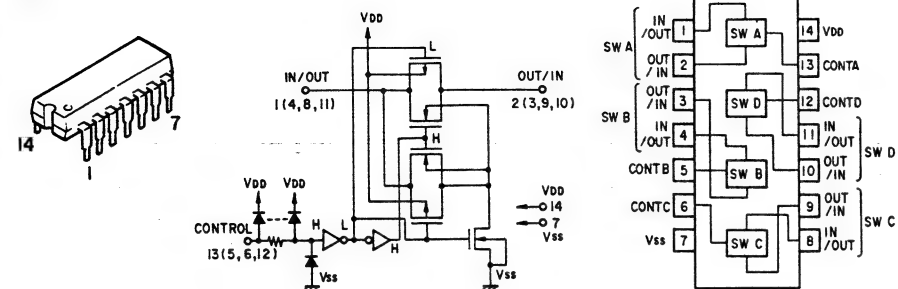
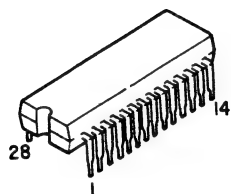
Infinite attenuation is obtained at -78 dB. Then one step below the infinite attenuation is -76 dB.

Change to the taken in data synchronize ST signal rise.

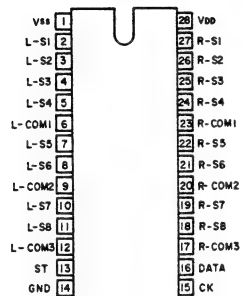


To input DATA, CK, ST, refer to timing chart below.

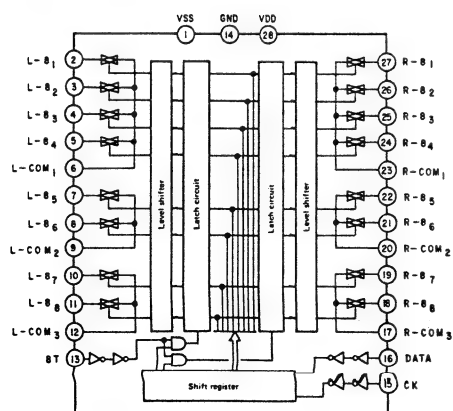


LC4966
(Sanyo)TC9164N
(Toshiba)

TC9164N



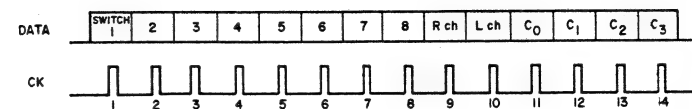
TC9164N



Function

Data input

TC9162/63/64N: input the specific data to DATA, CK, ST ports, and each analog switch can be optionally controlled. Data comprise 14 bit as per below:



Bit 1 ~ 8 correspond with analog switch 1 ~ 8: set "ON" switch bit to "1" level. (Note)

Bit 9, 10 are for left/right channel selection.

"1" level selects the channel: able to set the level ("1", "1"), ("1", "0") or ("0", "1").

Bit 11 ~ 14 are code bit used for chip selection.

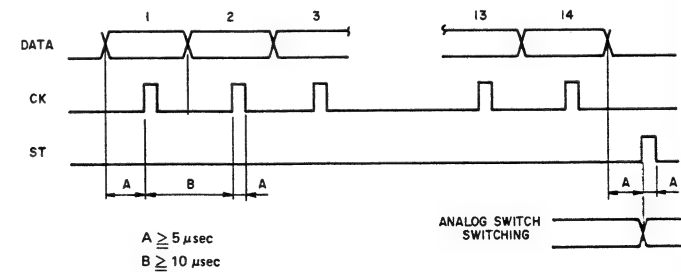
e.g. When employ TC9162N, TC9163N, TC9164N simultaneously, make common connection with DATA, CK, ST ports, and the code bit data selects one of TC9162N, TC9163N, or TC9164.

Each code is set as below.

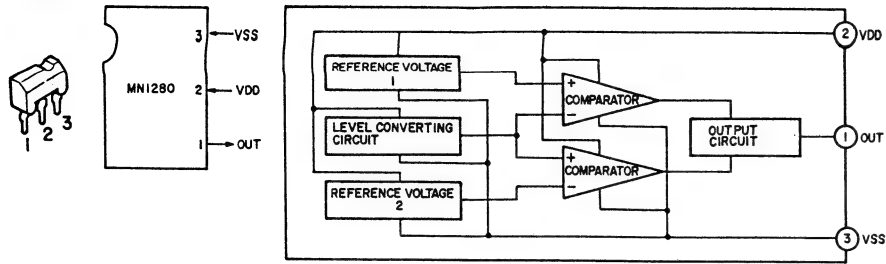
| | C ₀ | C ₁ | C ₂ | C ₃ |
|---------|----------------|----------------|----------------|----------------|
| TC9162N | 0 | 0 | 0 | 0 |
| TC9163N | 1 | 0 | 0 | 0 |
| TC9164N | 0 | 1 | 0 | 0 |

DATA, CK, ST Timing

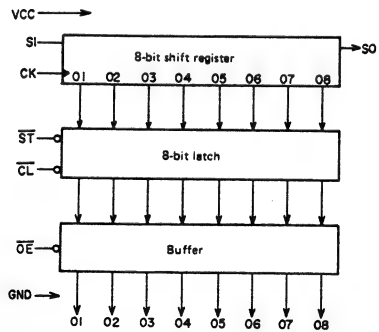
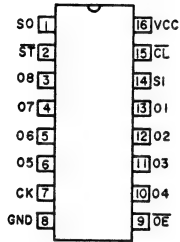
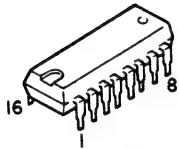
Refer to figure below for DATA, CK, ST timing input.



MN1280S
(Matsushita)



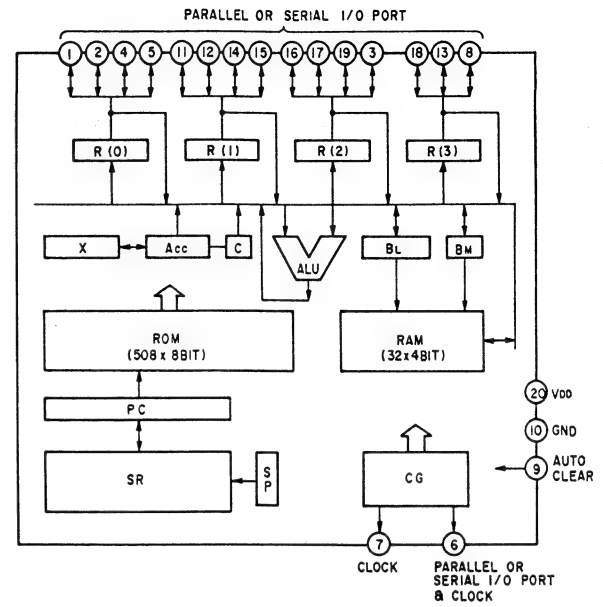
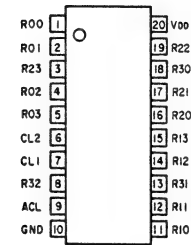
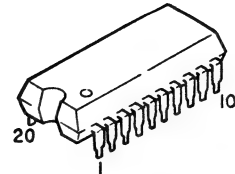
TMS1035NE
(T.I.)



| \overline{CL} | CK | \overline{OE} | \overline{ST} | SI | PO | | SO |
|-----------------|----|-----------------|-----------------|----|----|------------------|----|
| | | | | | O1 | O _n | |
| L | X | L | X | X | H | H | X |
| X | X | H | X | X | Z | Z | X |
| H | ↑ | L | L | L | L | O _{n-1} | Q8 |
| H | ↑ | L | L | H | H | O _{n-1} | Q8 |
| H | ↑ | L | H | X | NC | NC | Q8 |
| H | ↑ | H | X | X | Z | Z | Q8 |
| H | ↓ | L | X | X | NC | NC | NC |
| H | ↓ | H | X | X | Z | Z | NC |
| H | L | L | ⌊ | X | Q1 | Q _n | Q8 |

\overline{CL} = clear
CK = clock
 \overline{OE} = enable output
 \overline{ST} = strobe
SI = serial input
SO = serial output
PO = parallel output (O1—O8)
X = infinite
NC = no change
Z = high impedance

LU59002
(Sharp)



Symbol description
Acc : Accumulator
BL, BM : RAM address register
CG : Clock generator
SR : Stack register
X : Temporary register
C : Carry F/F
PC : Program counter
ALU : Arithmetic logic unit
SP : Stack pointer
R(0) ~ R(3) : Output latch

| Pin No. | Name | Function |
|---------|----------------|---|
| 1 | SDO | Serial Date Output |
| 2 | — | NC |
| 3 | CKI | Serial data transfer, clock input |
| 4 | RDY | Data output, cut into IC701 port D6 39 |
| 5 | VDD | 5V |
| 6 | OSC | 455kHz OSC |
| 7 | OSC | 455kHz OSC |
| 8 | — | GND |
| 9 | ACL | Input for "HIGH" pulse from IC701 at the time of power ON |
| 10 | GND | |
| 11 | DIN | Remote control code input from RM77 |
| 12 | SYSTEM ADDRESS | 0V |

| Pin No. | Name | Function |
|---------|------------------|----------|
| 13 | SYSTEM ADDRESS | 0V |
| 14 | SYSTEMTE ADDRESS | 0V |
| 15 | SYSTEMTE ADDRESS | 5V |
| 16 | MODE ADDRESS | 0V |
| 17 | MODE ADDRESS | 5V |
| 18 | SYSTEM ADDRESS | 5V |
| 19 | — | 5V |
| 20 | — | 5V |

| CH | System address | | | | Data | | | | Data extension | | C ₁₄ K | DRA-75VR | |
|----|----------------|----------------|----------------|-------------------------------|-------------------------------|---|---------------------------------|----------|----------------|---|-------------------|--------------|------------|
| | C ₁ | C ₂ | C ₃ | C ₄ C ₅ | C ₆ C ₇ | C ₈ C ₉ C ₁₀ C ₁₁ | C ₁₂ C ₁₃ | RECEIVER | CD | | | | |
| 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | — | — |
| 2 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 3 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 2 |
| 4 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 3 |
| 5 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 4 | 4 |
| 6 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 5 | 5 |
| 7 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 6 | 6 |
| 8 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 7 | 7 |
| 9 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 8 | 8 |
| 10 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 9 | 9 |
| 11 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 10 | 10 |
| 12 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | -10 | -10 |
| 13 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | PROGRAM | PROGRAM |
| 14 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | — | — |
| 15 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | — | — |
| 16 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | POWER ON/OFF | OPEN/CLOSE |
| 17 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | — | — |
| 18 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | VCR | CALL |
| 19 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | V. SOURCE | MODE |
| 20 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | VIDEO | REPEAT |
| 21 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | — | — |
| 22 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | — | — |
| 23 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | DIRECT | DIRECT |
| 24 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | PHONO | ⏮ |
| 25 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | TUNER | ⏪ |
| 26 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | CD | ⏴ |
| 27 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | AUX | ⏴⏴ |
| 28 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | MONITOR | ⏴ |
| 29 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | TAPE 1 | ⏴⏴ |
| 30 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | TAPE 2 | ■ |
| 31 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | | |

| CH | System address | | | | Data | | | | Data extension | | C ₁₄ K | DRA-75VR | | |
|----|----------------|----------------|----------------|-------------------------------|---|---------------------------------|----------|----|----------------|---|-------------------|----------|----|----|
| | C ₁ | C ₂ | C ₃ | C ₄ C ₅ | C ₆ C ₇ C ₈ C ₉ C ₁₀ C ₁₁ | C ₁₂ C ₁₃ | RECEIVER | CD | | | | | | |
| 32 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | — | — |
| 33 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 34 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 2 |
| 35 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 3 |
| 36 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 4 |
| 37 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 5 | 5 |
| 38 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 6 | 6 |
| 39 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 7 | 7 |
| 40 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 8 | 8 |
| 41 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 9 | 9 |
| 42 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 10 | 10 |
| 43 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 11 | 11 |
| 44 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 12 | 12 |
| 45 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 13 | 13 |
| 46 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 14 | 14 |
| 47 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 15 | 15 |
| 48 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 16 | 16 |
| 49 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 17 | 17 |
| 50 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 18 | 18 |
| 51 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 19 | 19 |
| 52 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 20 | 20 |
| 53 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 21 | 21 |
| 54 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 22 | 22 |
| 55 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 23 | 23 |
| 56 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 24 | 24 |

NOTE: Remote Control Commander in DRA-75VR is also feasible to control CD player by switching C₅ bit of system address.

RECEIVER

00110

↑↑

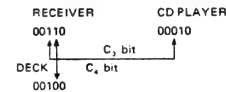
CD PLAYER

00010

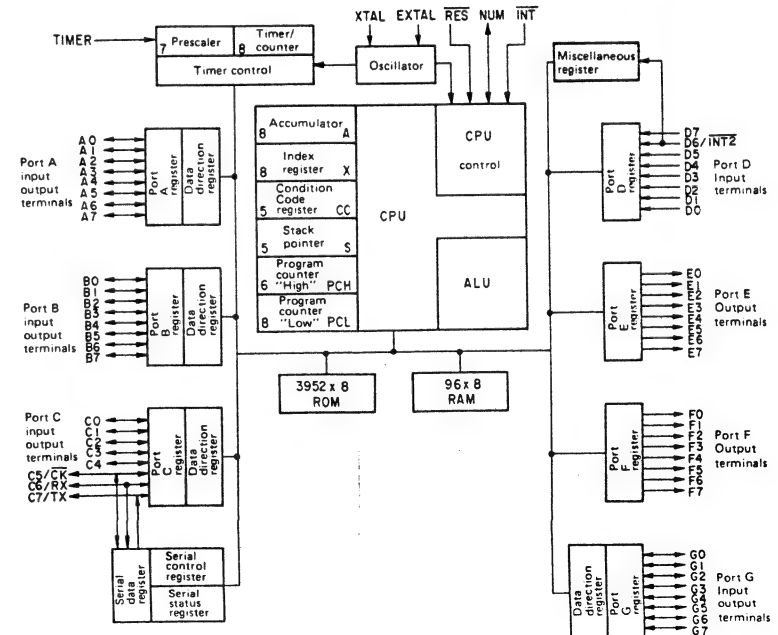
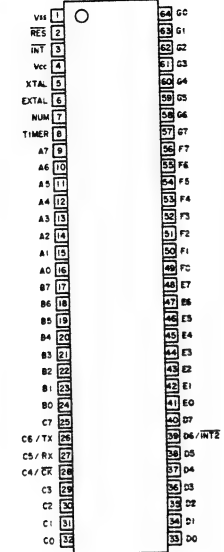
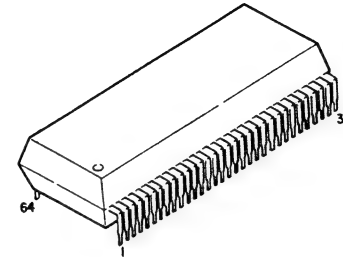
↑

C₅ bit

NOTE: Remote Control Commander in DRA-75VR is also feasible to control CD player by switching C₃ bit of system address.



HD6305XOA81P
(Hitachi)

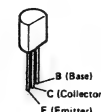


FUNCTIONS OF TERMINALS (HD6305X0A81P)
IC701: Microcomputer for system controlling HD6305X0A81P
 1-chip type 8 bit microcomputer

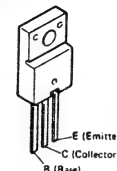
| Terminal No. | Description | I/O | Function |
|--------------|---------------------|-----|---|
| 1 | V _{SS} | — | Connected to 0V of power supply |
| 2 | RES | IN | RESET input terminal |
| 3 | INT | IN | Interrupt request input terminal |
| 4 | STBY | IN | Connected to 5V of power supply |
| 5 | XTAL | IN | Input terminal for built-in clock |
| 6 | EXTAL | IN | Input terminal for built-in clock |
| 7 | NUM | IN | Connected to 0V of power supply |
| 8 | TIMER | IN | Connected to 0V of power supply |
| 9 | A ₇ | OUT | OUTPUT LATCH "LOW" ACTIVE |
| 10 | A ₆ | OUT | OUTPUT LATCH "LOW" ACTIVE |
| 11 | A ₅ | OUT | OUTPUT LATCH "LOW" ACTIVE |
| 12 | A ₄ | OUT | OUTPUT LATCH "LOW" ACTIVE |
| 13 | A ₃ | OUT | OUTPUT LATCH "LOW" ACTIVE |
| 14 | A ₂ | OUT | OUTPUT LATCH "LOW" ACTIVE |
| 15 | A ₁ | OUT | OUTPUT LATCH "LOW" ACTIVE |
| 16 | A ₀ | OUT | OUTPUT LATCH "LOW" ACTIVE |
| 17 | B ₇ | OUT | OUTPUT LATCH "LOW" ACTIVE |
| 18 | B ₆ | OUT | OUTPUT LATCH "LOW" ACTIVE |
| 19 | B ₅ | — | NC |
| 20 | B ₄ | OUT | OUTPUT LATCH "LOW" ACTIVE |
| 21 | B ₃ | — | NC |
| 22 | B ₂ | — | NC |
| 23 | B ₁ | OUT | CLOCK |
| 24 | B ₀ | OUT | STROBE |
| | | | CLOCK OUTPUT port for TMS1035 |
| | | | STROBE OUTPUT port for TMS1035 |
| 25 | TX/C ₇ | — | NC |
| 26 | RX/C ₆ | — | NC |
| 27 | CK/C ₅ | — | NC |
| 28 | C ₄ | OUT | DATA |
| 29 | C ₃ | OUT | CL |
| 30 | C ₂ | IN | Connected to 5V of power supply |
| 31 | C ₁ | OUT | "Low" output at power off |
| 32 | C ₀ | OUT | ACL pulse output for LU59002 |
| 33 | V _{CC} | — | Connected to 5V of power supply |
| 34 | D ₁ | IN | Function key ASSIGN input terminal |
| 35 | D ₂ | IN | Function key ASSIGN input terminal |
| 36 | D ₃ | IN | Function key ASSIGN input terminal |
| 37 | D ₄ | IN | Function key ASSIGN input terminal |
| 38 | D ₅ | IN | SDO input for LU59002 |
| 39 | D ₆ /INT | IN | RDY input interrupt for LU59002 |
| 40 | D ₇ | IN | Connected to 5V of power supply |
| 41 | E ₀ | OUT | CLOCK output for LU59002 |
| 42 | E ₁ | OUT | "HIGH" ACTIVE LATCH at output RELAY ON |
| 43 | E ₂ | OUT | "LOW" ACTIVE LATCH at → MUTING ON |
| 44 | E ₃ | OUT | "LOW" ACTIVE LATCH at → 20 dB ON |
| 45 | E ₄ | OUT | TUNER KEY CONTROL pulse output "LOW" ACTIVE |
| 46 | E ₅ | OUT | TUNER SHIFT KEY pulse output "HIGH" ACTIVE |
| 47 | E ₆ | — | NC |
| 48 | E ₇ | — | NC |
| 49 | F ₀ | OUT | TUNER KEY pulse output 8 |
| 50 | F ₁ | OUT | TUNER KEY pulse output 7 |
| 51 | F ₂ | OUT | TUNER KEY pulse output 6 |
| 52 | F ₃ | OUT | TUNER KEY pulse output 5 |
| 53 | F ₄ | OUT | TUNER KEY pulse output 4 |
| 54 | F ₅ | OUT | TUNER KEY pulse output 3 |
| 55 | F ₆ | OUT | TUNER KEY pulse output 2 |
| 56 | F ₇ | OUT | TUNER KEY pulse output 1 |
| 57 | G ₀ | OUT | FUNCTION KEY STROBE pulse |
| 58 | G ₁ | OUT | |
| 59 | G ₂ | OUT | |
| 60 | G ₃ | OUT | |
| 61 | G ₄ | OUT | STROBE } Output for TC9164, TC9163, TC9176 |
| 62 | G ₅ | OUT | |
| 63 | G ₆ | OUT | |
| 64 | G ₇ | OUT | |
| | | | CLOCK |
| | | | Serial data output for TC9164, TC9163 |
| | | | DATA |
| | | | Serial data output for TC9176 |

• TRANSISTORS (included FET)

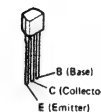
2SC1815L(BL/GR)
 2SC1815(BL)
 2SC1841(E/F)
 2SA1015(GR)
 2SA970(BL/GR)
 2SA988(E/F)
 2SC2240(BL/GR)



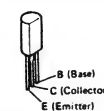
2SC3851(Y)/(G)
 2SA1488(Y)/(G)



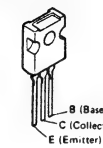
BIAS RESISTOR
 built-in
 TRANSISTORS
 RN1204 (47K-47K)
 RN2203 (22K-22K)
 RN2204 (47K-47K)



2SC2705(O/Y)
 2SA1145(O/Y)
 2SC2878(A/B)
 2SA1282A(F)



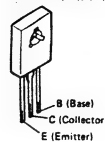
2SA1358(O)/(Y)
 2SC3421(O)/(Y)



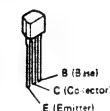
2SA1490(O)/(Y)
 2SC3854(O)/(Y)



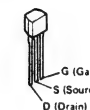
2SD882(Q)/(P)



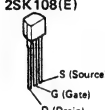
2SC2458(Y/GR)
 2SA1048(Y/GR)



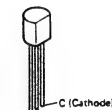
FET
 2SK161(Y/GR)



FET
 2SK365(BL/GR)
 2SK108(E)

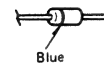


Thyristor
 SF0R1A42



• DIODES

1S2076A



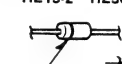
1SS106



1SS270(A)



HZ6C-1
 HZ5C-1
 HZ15-2



HZ4B-3
 HZ16-2
 HZ36-3



DSA1A2



1D4841

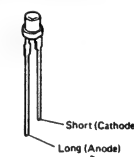


4D4842
 (for EP1)

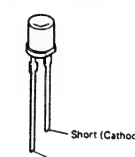


• LED'S

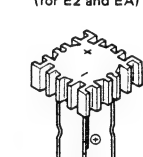
SEL2413E-D2 Green
 SEL2213C-D1 Red



SEL1414E-D2 Green
 SEL1213C-D Red

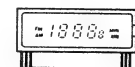


D5FB20
 (for E2 and EA)



• FLD

FIP7B8GS
 (NEC)

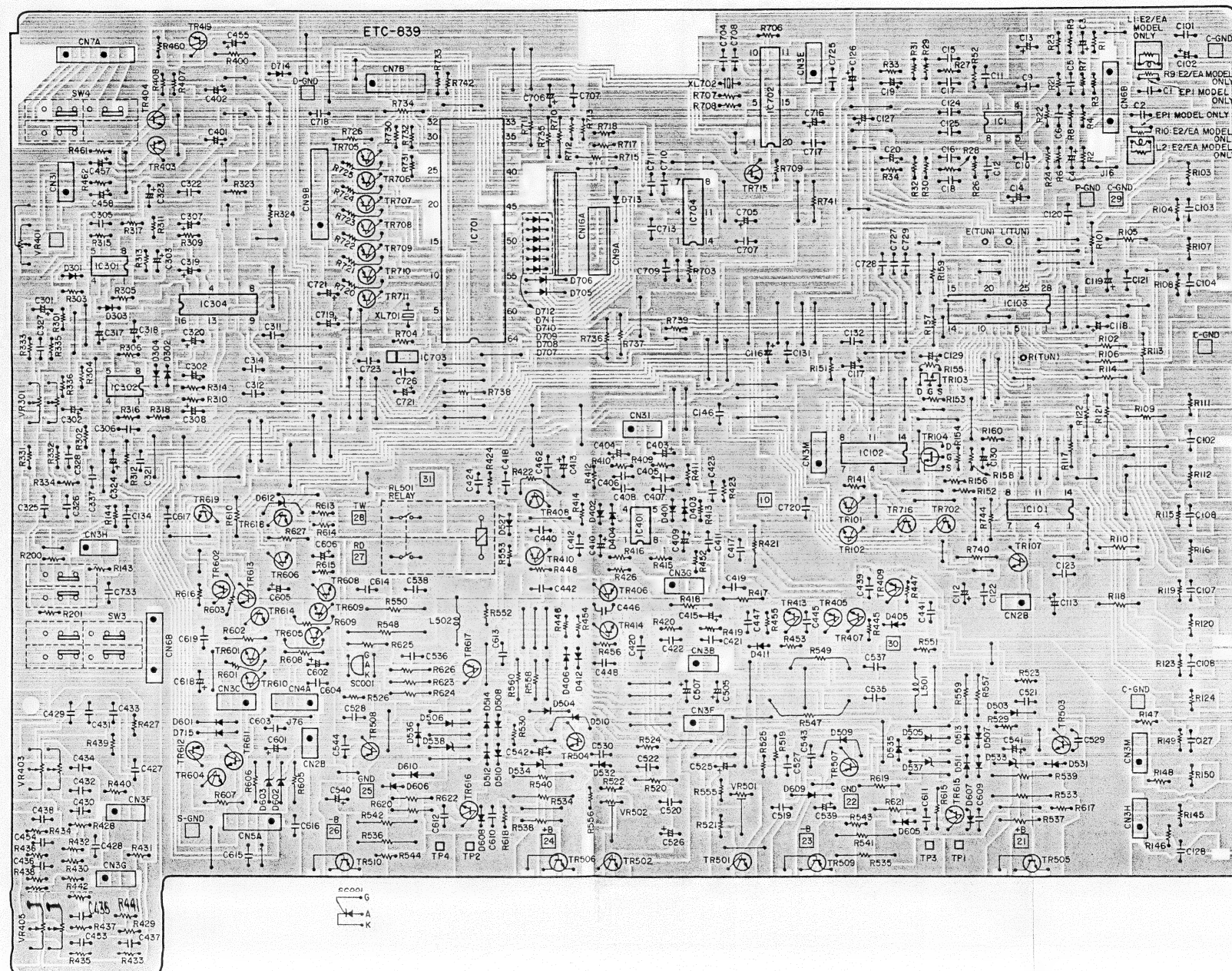


$$\frac{FM}{AM} = \frac{f_1}{f_2} \times \frac{f_3}{f_4} \times \frac{f_5}{f_6} \times \frac{f_7}{f_8} \times \frac{f_9}{f_{10}} = \text{MHz}$$

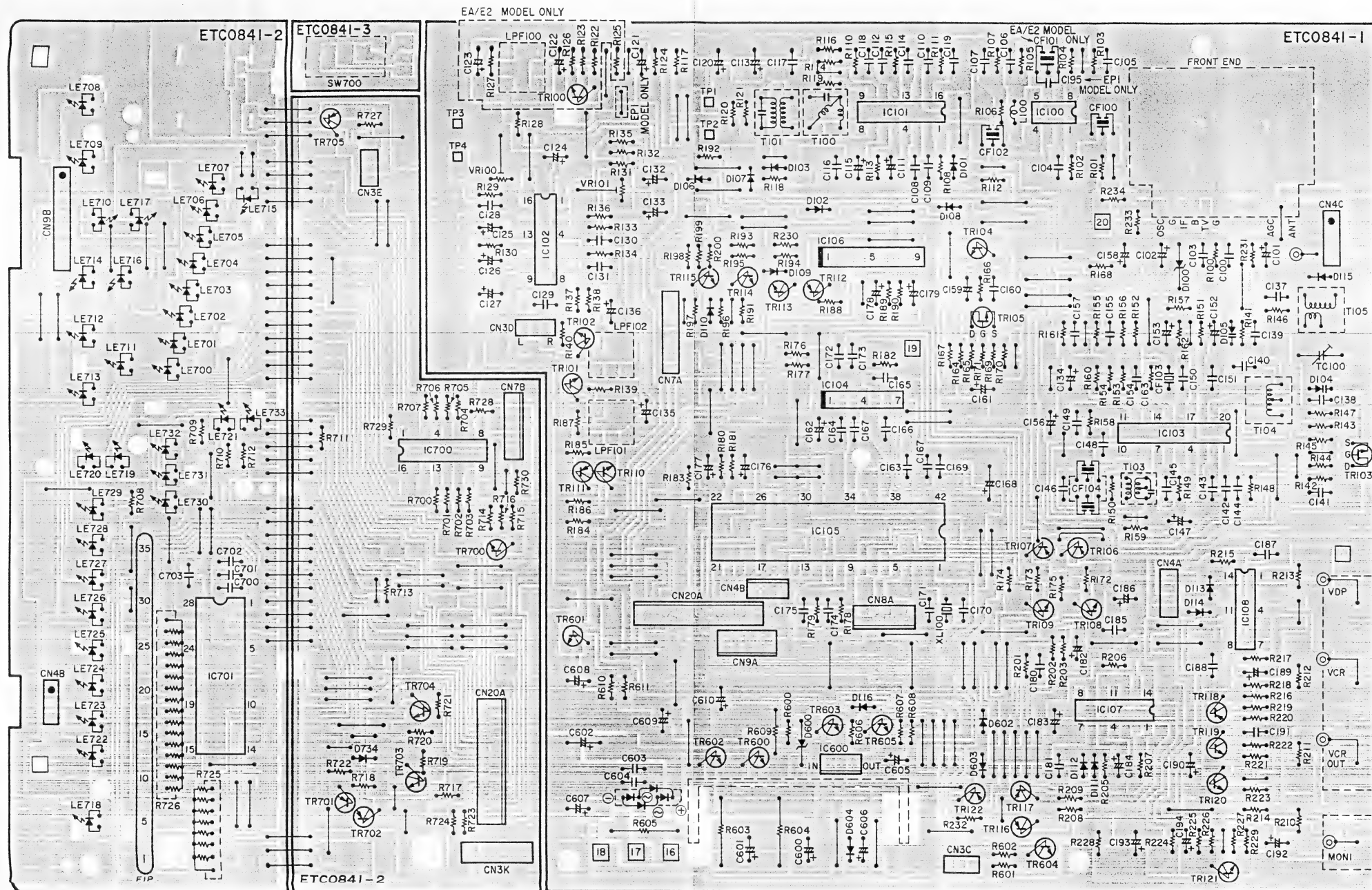
Polarity connection

| | | | | | | | | | | | | | | | | | | |
|--------------------|----|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Terminal number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Connected polarity | F | (b ₅) | P(a ₄) | P(f ₄) | P(e ₄) | P(d ₄) | P(c ₄) | IC | P(g ₄) | P(b ₄) | P(a ₃) | P(f ₃) | P(e ₃) | P(d ₃) | P(c ₃) | P(g ₃) | P(b ₃) | P(a ₂) |
| Terminal number | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | |
| Connected polarity | IC | P(f ₂) | P(e ₂) | P(d ₂) | P(c ₂) | P(g ₂) | P(b ₂) | P(b ₁) | P(g ₁) | P(kHz) | P(MHz) | P(FM) | P(AM) | P(e ₁) | P(c ₁) | G | F | |

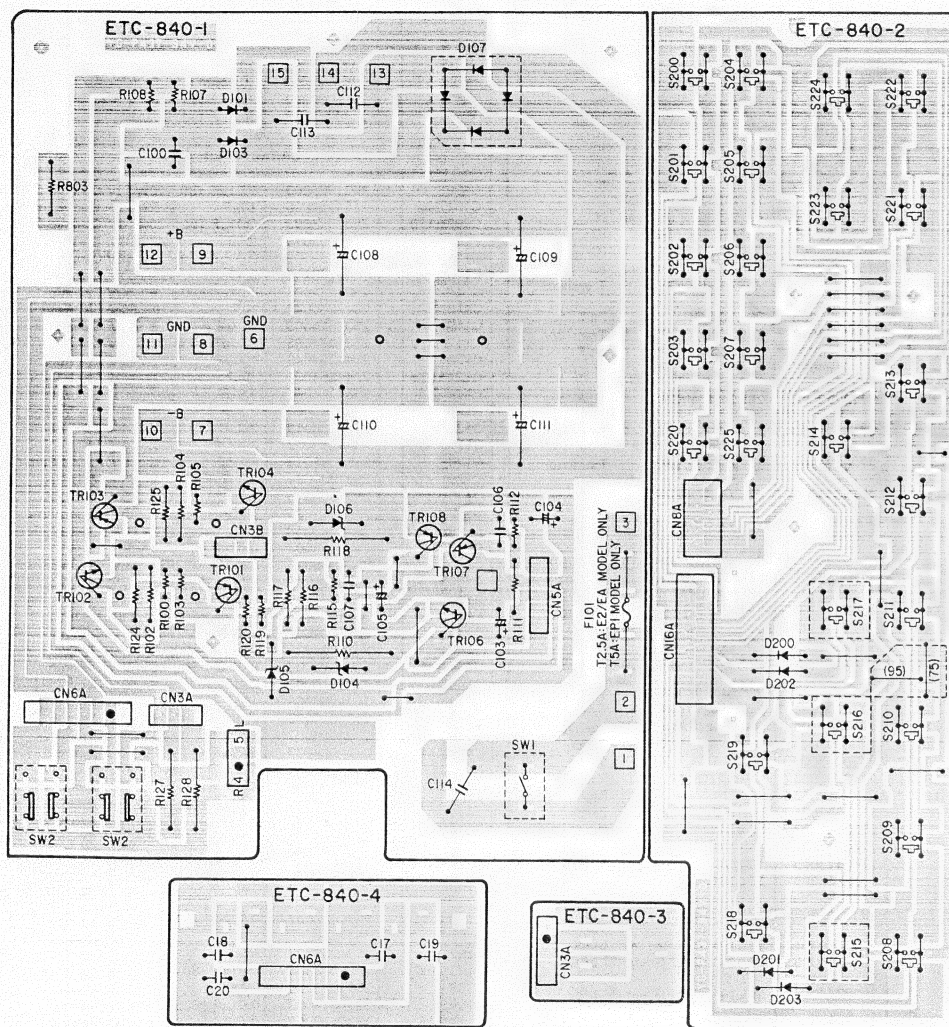
ETC0839D POWER UNIT



ETC0841D TUNER



ETC0840D P. SUPPLY & CONTROL UNIT



ETC0839D POWER UNIT PARTS LIST (for E2, EA)

| Ref. No. | Part No. | Part Name & Descriptions |
|--|------------|---|
| SEMICONDUCTORS | | |
| IC001 | 2650377004 | NJM-2068DD (JRC) IC |
| IC101 | 2620276005 | HD14066BP (Hitachi) IC |
| IC102 | 2630359006 | LC4966 (Sanyo) IC |
| IC103 | 2620699006 | TC9164N (Toshiba) IC |
| IC301,302 | 2630377004 | NJM2068DD (JRC) IC |
| IC304 | 2620625009 | TC9176P (Toshiba) IC |
| IC401 | 2630377004 | NJM2068DD (JRC) IC |
| IC701 | 2620696106 | HD6305X0A81P (Hitachi) IC |
| IC702 | 2620728003 | LU59002 (Sharp) IC |
| IC703 | 2620678001 | MN1280S (Matsushita) IC |
| IC704 | 2620575007 | HD14082BP (Hitachi) IC |
| TR101 | 2690030006 | RN2204 (47K-47K) Digital Transistor |
| TR102 | 2690029004 | RN1204 (47K-47K) Digital Transistor |
| TR103, 104 | 2750041003 | 2SK108(E) FET |
| TR403, 404 | 2730253015 | 2SC2878(A/B) Transistor |
| TR405, 406 | 2710131021 | 2SA988(E/F) Transistor |
| TR407, 408 | 2730235020 | 2SC1841(E/F) Transistor |
| TR409, 410 | 2710131021 | 2SA988(E/F) Transistor |
| TR413, 414 | 2730235020 | 2SC1841(E/F) Transistor |
| TR419 | 2690030006 | RN2204 (47K-47K) Digital Transistor |
| TR501, 502 | 2730198015 | 2SC1815(BL) Transistor |
| TR503, 504 | 2730323000 | 2SC3421(O/Y) Transistor |
| TR507, 508 | 2710195009 | 2SA1358(O/Y) Transistor |
| TR601 | 2730198015 | 2SC1815(BL) Transistor |
| TR602 | 2710211006 | 2SA1282A(F) Transistor |
| TR604, 605 | 2730253015 | 2SC2878(A/B) Transistor |
| TR606 | 2730235020 | 2SC1841(E/F) Transistor |
| TR608, 609 | 2730198015 | 2SC1815(BL) Transistor |
| TR610, 611 | 2690029004 | RN1204 (47K-47K) Digital Transistor |
| TR612, 613 | 2670030006 | RN2204 (47K-47K) Digital Transistor |
| TR614 | 2690029004 | RN1204 (47K-47K) Digital Transistor |
| TR615, 616 | 2730281003 | 2SC2705(O)/(Y) Transistor |
| TR617 | 2710168007 | 2SA1145(O)/(Y) Transistor |
| TR618 | 2730198015 | 2SC1815(BL) Transistor |
| TR619 | 2690029004 | RN1204 (47K-47K) Digital Transistor |
| TR701 | 2690029004 | RN1204 (47K-47K) Digital Transistor |
| TR702 | 2690030006 | RN2204 (47K-47K) Digital Transistor |
| TR705 ~711 | 2690028005 | RN2203 (22K-22K) Digital Transistor |
| TR715 | 2690029004 | RN1204 (47K-47K) Digital Transistor |
| TR716 | 2690030006 | RN2204 (47K-47K) Digital Transistor |
| SC001 | 2790016001 | SF0R1A42 Thyristor |
| D001,002 | 2760432000 | 1SS270A Diode |
| D301~304 | 2760432000 | 1SS270A Diode |
| D401~406 | 2760432000 | 1SS270A Diode |
| D411,412 | 2760432000 | 1SS270A Diode |
| D503~506 | 2760049011 | 1S2076A Diode |
| D507,508 | 2760432000 | 1SS270A Diode |
| D509,510 | 2760049011 | 1S2076A Diode |
| D511~514 | 2760432000 | 1SS270A Diode |
| D517,518 | 2760432000 | 1SS270A Diode |
| D527 | 2760432000 | 1SS270A Diode |
| D601 | 2760444001 | HRP22 Schottky Diode |
| D602,603 | 2760173084 | HZ6C.1 Zener |
| D605~608 | 2760432000 | 1SS270A Diode |
| Ref. No. | Part No. | Part Name & Descriptions |
| D609,610 | 2760049011 | 1S2076A Diode |
| D612 | 2760236031 | HZ6C-1 Zener |
| D705,706 | 2760049011 | 1S2076A Diode |
| D707~712 | 2760432000 | 1SS270A Diode |
| D713 | 2760049011 | 1S2076A Diode |
| D714 | 2760432000 | 1SS270A Diode |
| D715 | 2760049011 | 1S2076A Diode |
| RESISTORS (no included Carbon Film $\pm 5\%$, 1/4W, 1/6W Type) | | |
| $\pm R445,446$ | 2412379026 | 560 ohm $\pm 5\%$ 1/4W Carbon (NBS) |
| $\pm R447,448$ | 2412377044 | 100 ohm $\pm 5\%$ 1/4W Carbon (NBS) |
| $\pm R453,454$ | 2412379026 | 560 ohm $\pm 5\%$ 1/4W Carbon (NBS) |
| $\pm R455,456$ | 2412377044 | 100 ohm $\pm 5\%$ 1/4W Carbon (NBS) |
| $\pm R523\sim 526$ | 2412379053 | 750 ohm $\pm 5\%$ 1/4W Carbon (NBS) |
| $\pm R529,530$ | 2412378027 | 220 ohm $\pm 5\%$ 1/4W Carbon (NBS) |
| $\pm R533\sim 536$ | 2442013080 | 0.22 ohm $\pm 5\%$ 1W Metal Oxide (NB) |
| $\pm R539\sim 542$ | 2442013080 | 0.22 ohm $\pm 5\%$ 1W Metal Oxide (NB) |
| $\pm R547,548$ | 2440072023 | 6.8 ohm $\pm 5\%$ 2W Metal Oxide (NBF) |
| $\pm R549,550$ | 2440015022 | 6.8 ohm $\pm 5\%$ 1W Metal Oxide (NBF) |
| $\pm R551,552$ | 2412375004 | 10 ohm $\pm 5\%$ 1/4W Carbon (NBS) |
| $\pm R553$ | 2412377060 | 120 ohm $\pm 5\%$ 1/4W Carbon (NBS) |
| $\pm R617,618$ | 2412380057 | 2 kohm $\pm 5\%$ 1/4W Carbon (NBS) |
| $\pm R626$ | 2440048028 | 3.9 kohm $\pm 5\%$ 1W Metal Oxide (NBF) |
| $\pm R629,630$ | 2412370041 | 2 kohm $\pm 5\%$ 1/4W Carbon (NBF) |
| VR301 | 2110466008 | Variable Resistor 100 kohm Loudness |
| VR401 | 2110467007 | Variable Resistor 250 kohm Balance |
| VR403 | 2110465009 | Variable Resistor 50 kohm Treble |
| VR405 | 2110465012 | Variable Resistor 250 kohm Bass |
| VR501, 502 | 2116000002 | Semi Fixed Resistor 5 kohm |
| CAPACITORS | | |
| C001,002 | 2533627000 | 100pF $\pm 5\%$ 50V Ceramic |
| C003,004 | 2544254006 | 10 μ F $\pm 20\%$ 16V Electrolytic |
| C005,006 | 2533623004 | 68pF $\pm 5\%$ 50V Ceramic |
| C009,010 | 2533635005 | 220pF $\pm 5\%$ 50V Ceramic |
| C011,012 | 2551034050 | 0.068 μ F $\pm 5\%$ 50V Metalized |
| C013,014 | 2544250068 | 1000 μ F $\pm 20\%$ 6.3V Electrolytic |
| C015,016 | 2551121054 | 0.018 μ F $\pm 5\%$ 50V Plastic Film |
| C017,018 | 2533643000 | 470pF $\pm 5\%$ 50V Ceramic |
| C019,020 | 2544254006 | 10 μ F $\pm 20\%$ 16V Electrolytic |
| C035,036 | 2533627000 | 100pF $\pm 5\%$ 50V Ceramic |
| C101 | 2531025002 | 0.022 μ F $\pm 80\%$, $\pm 20\%$ 50V Ceramic |
| C102 | 2544260045 | 1 μ F $\pm 20\%$ 50V Electrolytic |
| C103~108 | 2531025002 | 0.022 μ F $\pm 80\%$, $\pm 20\%$ 50V Ceramic |
| C112,113 | 2544260045 | 1 μ F $\pm 20\%$ 50V Electrolytic |
| C116 | 2544260045 | 1 μ F $\pm 20\%$ 50V Electrolytic |
| C117~119 | 2544260045 | 1 μ F $\pm 20\%$ 50V Electrolytic |
| C120~125 | 2531025002 | 0.022 μ F $\pm 80\%$, $\pm 20\%$ 50V Ceramic |
| C126,127 | 2544260045 | 1 μ F $\pm 20\%$ 50V Electrolytic |
| C127,128 | 2531025002 | 0.022 μ F $\pm 80\%$, $\pm 20\%$ 50V Ceramic |
| C129,130 | 2544260045 | 1 μ F $\pm 20\%$ 50V Electrolytic |
| C131,132 | 2531025002 | 0.022 μ F $\pm 80\%$, $\pm 20\%$ 50V Ceramic |
| C133,134 | 2533631009 | 150pF $\pm 5\%$ 50V Ceramic |
| C301~304 | 2544260045 | 1 μ F $\pm 20\%$ 50V Electrolytic |
| C305,306 | 2533627000 | 100pF $\pm 5\%$ 50V Ceramic |
| C307,308 | 2544254006 | 10 μ F $\pm 20\%$ 16V Electrolytic |
| C317~320 | 2544260045 | 1 μ F $\pm 20\%$ 50V Electrolytic |
| C321,322 | 2531025002 | 0.022 μ F $\pm 80\%$, $\pm 20\%$ 50V Ceramic |
| C323,324 | 2544260045 | 1 μ F $\pm 20\%$ 50V Electrolytic |
| C325,326 | 2551121054 | 0.018 μ F $\pm 5\%$ 50V Plastic Film |
| C327,328 | 2531055030 | 390pF $\pm 10\%$ 50V Ceramic |

ETC0841D TUNER UNIT PARTS LIST (for E2, EA)

| Ref. No. | Part No. | Part Name & Descriptions |
|----------|-------------|----------------------------------|
| C401~404 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C405~408 | 2533627000 | 100pF ±5% 50V Ceramic |
| C409,410 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C411,412 | 2533599002 | 8pF ±0.5pF 50V Ceramic |
| C413 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C415 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C417~420 | 2551120000 | 0.001μF ±5% 50V Plastic Film |
| C421~424 | 2533639001 | 330pF ±5% 50V Ceramic |
| C427,428 | 2551121009 | 0.0068μF ±5% 50V Plastic Film |
| C429,430 | 2533633007 | 1μF ±5% 50V Ceramic |
| C431,432 | 2551120013 | 0.0012μF ±5% 50V Plastic Film |
| C433,434 | 2561034047 | 0.056μF ±5% 50V Metalized |
| C435,436 | 2561034089 | 0.12μF ±5% 50V Metalized |
| C439,440 | 25334949009 | 100pF ±5% 500V Ceramic |
| C441,442 | 2551121067 | 0.022μF ±5% 50V Plastic Film |
| C445,446 | 25334949009 | 100pF ±5% 500V Ceramic |
| C447,448 | 2551121067 | 0.022μF ±5% 50V Plastic Film |
| C453,454 | 2551121041 | 0.015μF ±5% 50V Plastic Film |
| C455 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C457 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C458 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C461,462 | 2531025002 | 0.022μF +80, -20% 50V Ceramic |
| C475,476 | 2533635005 | 220pF ±5% 50V Ceramic |
| C505 | 2543046008 | 1μF ±20% 100V Electrolytic (B.P) |
| C507 | 2543046008 | 1μF ±20% 100V Electrolytic (B.P) |
| C519,520 | 2551024003 | 0.01μF +80, -20% 50V Ceramic |
| C521,522 | 2551120000 | 0.001μF ±5% 50V Plastic Film |
| C525,526 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C527,528 | 2551120000 | 0.001μF ±5% 50V Plastic Film |
| C529,530 | 2533498005 | 150pF ±5% 500V Ceramic |
| C535,536 | 2561034076 | 0.1μF ±5% 50V Metalized |
| C537,538 | 2561034047 | 0.056μF ±5% 50V Metalized |
| C539~542 | 2543046008 | 1μF ±20% 100V Electrolytic (B.P) |
| C543,544 | 2533498005 | 150pF ±5% 500V Ceramic |
| C601,602 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C603,604 | 2531024003 | 0.01μF +80, -20% 50V Ceramic |
| C605 | 2544250045 | 1μF ±20% 50V Electrolytic |
| C606 | 2544250042 | 330μF ±20% 6.3V Electrolytic |
| C609,610 | 2551120084 | 0.0047μF ±5% 50V Plastic Film |
| C613 | 2531025002 | 0.022μF +80, -20% 50V Ceramic |
| C614 | 2531024003 | 0.01μF +80, -20% 50V Ceramic |
| C615~617 | 2531025002 | 0.022μF +80, -20% 50V Ceramic |
| C618 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C619 | 2531025002 | 0.022μF +80, -20% 50V Ceramic |
| C701 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C704 | 2533635005 | 220pF ±5% 50V Ceramic |
| C705,706 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C707 | 2531024003 | 0.01μF +80, -20% 50V Ceramic |
| C708 | 2533635005 | 220pF ±5% 50V Ceramic |
| C709~711 | 2531050506 | 220pF ±10% 50V Ceramic |
| C713 | 2531050506 | 220pF ±10% 50V Ceramic |
| C716 | 2544252037 | 100μF ±20% 10V Electrolytic |
| C717,718 | 2531024003 | 0.01μF +80, -20% 50V Ceramic |
| C719 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C720 | 2531024003 | 0.01μF +80, -20% 50V Ceramic |
| C721 | 2544260044 | 1μF ±20% 50V Electrolytic |
| C723 | 2531024003 | 0.01μF +80, -20% 50V Ceramic |
| C725 | 2531025002 | 0.022μF +80, -20% 50V Ceramic |
| C726 | 2531024003 | 0.01μF +80, -20% 50V Ceramic |
| C777 | 2531024003 | 0.01μF +80, -20% 50V Ceramic |

E.U.P.

| | | |
|----------------------|--------------------------|----------------------------|
| L001,002 L501,502 | 2359003002 2359001004 | FTZ Choke Coil Inductor |
|----------------------|--------------------------|----------------------------|

| Ref. No. | * | Part No. | Part Name & Descriptions | |
|-------------|---|------------|----------------------------|------|
| XL701 | | 3990034002 | OSC Element (CST4.00MG) | |
| XL702 | | 2610037005 | OSC Element (CSB455E) | |
| SW003 | * | 2124607002 | 2P Push SW. (Phono. Mode) | |
| SW004 | | 2124462001 | 1P Push SW. (Tuner. Mode) | |
| RL501 | | 2140037009 | Relay | |
| OTHER PARTS | | | | Q'ty |
| | * | 2221317208 | (P.W. Board) | 1 |
| | | 2090008146 | Jumper Wire P=5mm | 12 |
| | | 2090008120 | Jumper Wire P=10mm | 98 |
| | | EP-5667H1 | Terminal Pin | 18 |
| | | 2050152003 | 6P Connector Base | 3 |
| | | 2050298048 | 9P FFC Con. Base (S) | 1 |
| | | 2050298019 | 16P FFC Con. Base (S) | 1 |
| | | 2050185038 | 3P Wire Holder | 14 |
| | | 2050185041 | 4P Wire Holder | 1 |
| | | 2050185054 | 5P Wire Holder | 1 |
| | | 2050185067 | 6P Wire Holder | 2 |
| | | 2050185070 | 7P Wire Holder | 1 |
| | | 2050185025 | 2P Wire Holder | 3 |
| | | 2050271094 | 9P PH Connector Base | 1 |
| | * | 2042171018 | 7P Connector Cord | 1 |
| | * | 2042170006 | 7P EH Connector Cord | 1 |
| | * | 2038166008 | 5P EH Connector Cord | 1 |
| | * | 2036156023 | 4P EH Connector Cord | 1 |
| | * | 2034340006 | 3P EH Connector Cord | 1 |
| | * | 2034353006 | 3P EH Connector Cord Ass'y | 1 |
| | * | 2034304013 | 3P EH Connector Cord | 1 |
| | * | 2034338005 | 3P EH Connector Cord | 1 |
| | * | 2090121023 | T.S.W. Ass'y | 1 |
| | * | 2090121036 | T.S.W. Ass'y | 1 |
| | * | 2090121049 | T.S.W. Ass'y | 1 |
| | * | 2090172001 | T.S.W. Ass'y | 1 |
| | * | 2090121065 | T.S.W. Ass'y | 1 |
| | * | 2090146008 | 2C Shield Wire | 1 |
| | * | 2090146011 | 2C Shield Wire | 1 |
| | * | 2090151006 | 2C Ribbon Cable | 1 |
| | * | 2090153004 | Vinyl Wire | 1 |
| | * | 2090153020 | Vinyl Wire | 1 |
| | * | 2090153033 | Vinyl Wire | 1 |
| | * | 2090164035 | T.S.W. Contact Ass'y | 1 |
| | * | 2090164048 | T.S.W. Contact Ass'y | 1 |

| Ref. No. | * | Part No. | Part Name & Descriptions |
|---|---|------------|---------------------------------------|
| SEMICONDUCTORS | | | |
| IC100 | * | 2630414006 | LA1222 (Sanyo) IC |
| IC101 | | 2630083000 | HA11225 (Hitachi) IC |
| IC102 | | 2630384000 | μ PC1235C (NEC) IC |
| IC103 | | 2630145003 | LA1245 (Sanyo) IC |
| IC104 | | 2630232000 | TD6104P (Toshiba) IC |
| IC105 | | 2620452104 | TC9147BP (Toshiba) IC |
| IC106 | | 2630371000 | LB1403N (Sanyo) IC |
| IC107 | | 2620300007 | HD14011BP (Hitachi) IC |
| IC108 | | 2620276005 | HD14066BP (Hitachi) IC |
| IC600 | * | 2630459003 | L78M05ML (JRC) IC |
| IC700 | | 2620700005 | TMS1035NE (T.I.) IC |
| IC701 | | 2620453006 | TD6301AP (Toshiba) IC |
| TR100 ~102 | | 2730222004 | 25C245H(Y/GR) Transistor |
| TR103 | | 2750051006 | 25K161(GR) FET |
| TR104 | | 2730222004 | 25C245H(Y/GR) Transistor |
| TR105 | | 2750053004 | 25K365(BL/GR) FET |
| TR106, 107 | | 2710194000 | 25A104H(Y/GR) Transistor |
| TR108 ~110 | | 2730222004 | 25C245H(Y/GR) Transistor |
| TR111, 112 | | 2710194000 | 25A104H(Y/GR) Transistor |
| TR113 ~115 | | 2730222004 | 25C245H(Y/GR) Transistor |
| TR116 ~118 | | 2710194000 | 25A104H(Y/GR) Transistor |
| TR119 ~121 | | 2730222004 | 25C245H(Y/GR) Transistor |
| TR122 | | 2710194000 | 25A104H(Y/GR) Transistor |
| TR600 | | 2730338008 | 25C3851(YI)/(G) Transistor |
| TR601 | | 2740078031 | 25D882(Q/P) Transistor |
| TR602 ~605 | | 2730222004 | 25C245H(Y/GR) Transistor |
| TR700 | | 2730222004 | 25C245H(Y/GR) Transistor |
| TR701, 702 | | 2710194000 | 25A104H(Y/GR) Transistor |
| TR703 | | 2730222004 | 25C245H(Y/GR) Transistor |
| TR704 | | 2710194000 | 25A104H(Y/GR) Transistor |
| TR705 | * | 2690030006 | RN2204 (47K-47K) Digital Transistor |
| D100 | | 2760185014 | HZ4B-3 Zener |
| D101~103 | | 2760417009 | 15S270 Diode |
| D104,105 | | 2760302004 | SVC321D2-5P Varactor |
| D106~116 | | 2760417009 | 15S270 Diode |
| D600 | | 2760253001 | HZ15-2 Zener |
| D601 | | 2760422007 | 1D4841 Diode |
| D602~604 | | 2760417009 | 15S270 Diode |
| D734 | | 2760417009 | 15S270 Diode |
| LE700 ~707 | * | 3939345008 | SEL2413E-D2 Green (3) LED |
| LE708 ~714 | * | 3939344009 | SEL1413E-D2 Green (5) LED |
| LE718 | * | 3939342001 | SEL1213C-D Red (5) LED |
| LE719 ~721 | * | 3939345008 | SEL2413E-D2 Green (3) LED |
| LE722 ~729 | | 3939344009 | SEL1413E-D2 Green (5) LED |
| LE730 ~732 | | 3939345008 | SEL2413E-D2 Green (3) LED |
| LE733 | | 3939343000 | SEL2213C-D1 Red (3) LED |
| RESISTORS (not included Carbon Film $\pm 5\%$, 1/6W, 1/4W Type) | | | |
| AR603 | - | 2440037026 | 470 ohm $\pm 5\%$ 1W Metal Oxide (NB) |
| AR604 | - | 2440033020 | 220 ohm $\pm 5\%$ 1W Metal Oxide (NB) |
| AR605 | - | 2440005029 | 1 ohm $\pm 5\%$ 1W Metal Oxide (NB) |

| Ref. No. | Part No. | Part Name & Descriptions |
|------------|-------------|---|
| AR609 | 24122313082 | 4.7 ohm \pm 5% 1/4W Carbon (NB) |
| R725 | 2462029009 | 10 kohm x 8 Resistor Array |
| R726 | 2462029012 | 10 kohm x 16 Resistor Array |
| VR100 | 2116000002 | Semi Fixed Resistor 5 kohm |
| VR101 | 2116000028 | Semi Fixed Resistor 100 kohm |
| CAPACITORS | | |
| C100 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C101,102 | 2544254006 | 10 μ F \pm 20% 16V Electrolytic |
| C103~110 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C111 | 2544254019 | 22 μ F \pm 20% 16V Electrolytic |
| C112 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C113 | 2544260032 | 0.47 μ F \pm 20% 50V Electrolytic |
| C114 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C115 | 2544260045 | 1 μ F \pm 20% 50V Electrolytic |
| C116 | 2533629008 | 120pF \pm 5% 50V Ceramic |
| C117~119 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C120 | 2544254048 | 100 μ F \pm 20% 16V Electrolytic |
| C121~123 | 2544254006 | 10 μ F \pm 20% 16V Electrolytic |
| C124 | 2544254051 | 220 μ F \pm 20% 16V Electrolytic |
| C125 | 2544260061 | 3.3 μ F \pm 20% 50V Electrolytic |
| C126 | 2544260058 | 2.2 μ F \pm 20% 50V Electrolytic |
| C127 | 2544260032 | 0.47 μ F \pm 20% 50V Electrolytic |
| C128 | 2556091008 | 470nF \pm 5% 50V Plastic Film |
| C129 | 2561034034 | 0.047 μ F \pm 5% 50V Metalized |
| C130,131 | 2539030015 | 1500pF \pm 10% 25V Ceramic |
| C132,133 | 2544214006 | 10 μ F \pm 10% 16V Electrolytic |
| C135,136 | 2544260058 | 2.2 μ F \pm 20% 50V Electrolytic |
| C137 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C138 | 2533635005 | 220pF \pm 5% 50V Ceramic |
| C139 | 2533609002 | 18pF \pm 5% 50V Ceramic |
| C140 | 2554201049 | 390pF \pm 5% 50V Plastic Film |
| C141 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C142 | 2531004007 | 1000pF \pm 10% 50V Ceramic |
| C143 | 2531025002 | 0.022 μ F +80,-20% 50V Ceramic |
| C144,145 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C146 | 2533619005 | 47pF \pm 5% 50V Ceramic |
| C147 | 2544254006 | 10 μ F \pm 20% 16V Electrolytic |
| C148 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C149 | 2531004007 | 1000pF \pm 10% 50V Ceramic |
| C150,151 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C152 | 2544260061 | 3.3 μ F \pm 20% 50V Electrolytic |
| C153 | 2544258002 | 4.7 μ F \pm 20% 35V Electrolytic |
| C154,155 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C156 | 2544254035 | 47 μ F \pm 20% 16V Electrolytic |
| C157 | 2531025002 | 0.022 μ F +80,-20% 50V Ceramic |
| C158 | 2544228061 | 1 μ F \pm 20% 50V Electrolytic (Low leak) |
| C159 | 2544214020 | 1 μ F \pm 20% 50V Electrolytic (B.P) |
| C160 | 2531025002 | 0.022 μ F +80,-20% 50V Ceramic |
| C161 | 2544254048 | 100 μ F \pm 20% 16V Electrolytic |
| C162 | 2544252024 | 47 μ F \pm 20% 10V Electrolytic |
| C163~167 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C168 | 2590004006 | 22000 μ F 5.5V for Backup |
| C169 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C170,171 | 2533699002 | 6pF \pm 0.50F 50V Ceramic |
| C172~175 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C176,177 | 2544260058 | 2.2 μ F \pm 20% 50V Electrolytic |
| C178,179 | 2544260032 | 0.47 μ F \pm 20% 50V Electrolytic |
| C180,181 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C182 | 2544260032 | 0.47 μ F \pm 20% 50V Electrolytic |
| C183,184 | 2544258002 | 4.7 μ F \pm 20% 35V Electrolytic |
| C185 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C186 | 2544252024 | 47 μ F \pm 20% 10V Electrolytic |
| C187,188 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |
| C189 | 2544254035 | 47 μ F \pm 20% 16V Electrolytic |
| C190 | 2544254077 | 470 μ F \pm 20% 16V Electrolytic |
| C191 | 2531024003 | 0.01 μ F +80,-20% 50V Ceramic |

ETC0840D P. SUPPLY & CONTROL UNIT PARTS LIST (for E2, EA)

ETC0839 POWER UNIT PARTS LIST (for EP1)

| Ref. No. | Part No. | Part Name & Descriptions |
|----------|------------|---|
| C192 | 2544254077 | 470 μ F \pm 20% 16V Electrolytic |
| C193 | 2544254080 | 1000 μ F \pm 20% 16V Electrolytic |
| C194 | 2544254035 | 47 μ F \pm 20% 16V Electrolytic |
| C195 | 2531024003 | 0.01 μ F +80, -20% 50V Ceramic |
| C197 | 2531024003 | 0.01 μ F +80, -20% 50V Ceramic |
| C600 | 2544254006 | 10 μ F \pm 20% 16V Electrolytic |
| C601 | 2544256046 | 100 μ F \pm 20% 25V Electrolytic |
| C602 | 2544258099 | 1000 μ F \pm 20% 35V Electrolytic |
| C603,604 | 2531024003 | 0.01 μ F +80, -20% 50V Ceramic |
| C605,606 | 2544254006 | 10 μ F \pm 20% 16V Electrolytic |
| C607 | 2544254093 | 2200 μ F \pm 20% 16V Electrolytic |
| C608 | 2544254048 | 100 μ F \pm 20% 16V Electrolytic |
| C609 | 2544254006 | 10 μ F \pm 20% 16V Electrolytic |
| C610 | 2544254077 | 470 μ F \pm 20% 16V Electrolytic |
| C611 | 2544250013 | 47 μ F \pm 20% 6.3V Electrolytic |
| C700~702 | 2531060005 | 2200pF \pm 10% 50V Ceramic |
| C703 | 2531024003 | 0.01 μ F +80, -20% 50V Ceramic |
| C704,705 | 2533639001 | 330pF \pm 5% 50V Ceramic |
| C706 | 2531025002 | 0.022 μ F +80, -20% 50V Ceramic |
| TC100 | 2130022008 | Trimmer Condenser |

COIL, TRANS

| | | |
|------------|------------|-----------------------------|
| L100 | 2350026020 | Inductor 10 μ H |
| T100 | 2312901002 | FM IF Det (A) (50kHz) |
| T101 | 2312902001 | FM IF Det (B) (50kHz) |
| T103 | 2313026009 | AM IFT |
| T104 | 2311118003 | MW OSC. Coil |
| T105 | 2311113008 | MW Ant. Coil |
| LP101, 102 | 2320085004 | Low Pass Filter |
| LPF100 | 2320096006 | Anti Birdie Filter |
| CF100 ~102 | 2610023006 | FM C. Filter (SFE10.7MHZ A) |
| CF103 | 2610031001 | AM C. Filter (BFU450C4) |
| CF104 | 2610065006 | AM C. Filter (SFZ450F3L) |

E.U.P.

| | Part No. | Part Name & Descriptions | Q'ty |
|------|------------|--------------------------|------|
| X100 | 2160039003 | Front End | 1 |
| | 3934022009 | FIP7B8GS FLD | 1 |
| | 3990040009 | X-tal (7.2MHz) | 1 |
| | 4990049009 | RM-577 (Remote Control) | 1 |
| F001 | 2048178002 | 1P Pin Jack | 1 |
| | 2061015029 | Fuse (1AT) | 1 |
| | 2020022008 | Fuse Holder | 2 |

OTHER PARTS

| | Part No. | Part Name & Descriptions | Q'ty |
|---|------------|--------------------------|------|
| * | 2221313202 | (P.W. Board) | 1 |
| | 2090008146 | Jumper Wire P=5mm | 34 |
| | 2090008120 | Jumper Wire P=10mm | 152 |
| | EP-5667H1 | Terminal Pin | 10 |
| | 4178028101 | Heat Sink | 1 |
| | 4713304015 | Bind Screw 3x8 | 2 |
| | 2030262007 | Ant. Pin Cord Ass'y | 1 |
| | 2050240009 | 3P Connector Base | 1 |
| | 2050185041 | 4P Wire Holder | 1 |
| | 1460822209 | LED Holder (A) | 1 |
| | 1460821200 | LED Holder (B) | 1 |
| | 4610294008 | Rubber Sheet | 1 |
| | 2050233074 | 2P EH Connector Base | 1 |
| | 2050233045 | 4P EH Connector Base | 1 |
| | 2050233032 | 3P EH Connector Base | 3 |
| | 2050271049 | 4P PH Connector Base | 1 |
| | 2050271078 | 7P PH Connector Base | 1 |
| | 2050241037 | 3P Connector Pin Ass'y | 1 |

| Ref. No. | Part No. | Part Name & Descriptions | Q'ty |
|----------|------------|--------------------------|------|
| * | 2050298051 | 20P FFC Con. Base (S) | 2 |
| | 2050298048 | 9P FFC Con. Base (S) | 1 |
| | 2050298035 | 8P FFC Con. Base (S) | 1 |
| | 2042172004 | 9P Connector Cord | 1 |
| | 2036172007 | 4P Connector Cord | 1 |
| | 4150309013 | P.V.C. Tube | 4 |
| | 2090154003 | Vinyl Wire | 1 |
| | 2090154016 | Vinyl Wire | 2 |
| | 2090168015 | Shield Wire Ass'y | 1 |
| | 5130637034 | Fuse Label | 1 |

| Ref. No. | Part No. | Part Name & Descriptions | Q'ty |
|----------------|------------|---------------------------|------|
| SEMICONDUCTORS | | | |
| TR101 | 2710206008 | 2SA1488(Y)/(G) Transistor | |
| TR102 | 2730187039 | 2SC2240(BL/GR) Transistor | |
| TR103 | 2710094032 | 2SA970(BL/GR) Transistor | |
| TR104 | 2730338008 | 2SC3851(Y)/(G) Transistor | |
| TR106 | 2730338008 | 2SC3851(Y)/(G) Transistor | |
| TR107 | 2710102021 | 2SA1015(GR) Transistor | |
| TR108 | 2710206008 | 2SA1488(Y)/(G) Transistor | |
| D101 | 2760427015 | DSA1A2 (Type-3) Diode | |
| D103 | 2760427015 | DSA1A2 (Type-3) Diode | |
| D104 | 2760221020 | HZ36-3 Zener | |
| D105 | 2760256008 | HZ16-2 Zener | |
| D106 | 2760221020 | HZ36-3 Zener | |
| D107 | 2760356005 | D5FB20 Diode | |
| D200~203 | 2760370007 | 1SS106TD Diode | |

RESISTORS (not included Carbon Film \pm 5%, 1/4W, 1/4W Type)

| | | |
|-----------|------------|---------------------------------------|
| AR110 | 2440093028 | 390 ohm \pm 5% 2W Metal Oxide (NBF) |
| AR118 | 2440093028 | 390 ohm \pm 5% 2W Metal Oxide (NBF) |
| AR119,120 | 2412387047 | 4.7 ohm \pm 5% 1/4W Carbon (NBS) |
| AR127,128 | 2440033020 | 220 ohm \pm 5% 1W Metal Oxide (NBF) |

CAPACITORS

| | | |
|----------|------------|--|
| C100 | 2544263042 | 1 μ F \pm 20% 100V Electrolytic |
| C103,104 | 2544260045 | 1 μ F \pm 20% 50V Electrolytic |
| C105 | 2544261015 | 47 μ F \pm 20% 50V Electrolytic |
| C106 | 2533619005 | 47pF \pm 5% 50V Ceramic |
| C107 | 2531055014 | 560pF \pm 10% 50V Ceramic |
| C108 | 2544216002 | 9200 μ F \pm 20% 63V Electrolytic |
| C110 | 2544216002 | 9200 μ F \pm 20% 63V Electrolytic |
| C112,113 | 2531053003 | 0.01 μ F +100, -0% 500V Ceramic |
| AC114 | 2538014003 | 0.01 μ F \pm 20% 400V Ceramic(AC) |
| C119 | 2544260045 | 1 μ F \pm 20% 50V Electrolytic |
| C120 | 2544089022 | 100 μ F \pm 20% 50V Electrolytic |
| AC199 | 2568024018 | 0.1 μ F \pm 20% 250V Metalized(AC) |

E.U.P.

| | Part No. | Part Name & Descriptions | Q'ty |
|----------|------------|--------------------------|------|
| S200~214 | 2124388004 | Tact Switch | 15 |
| S218~225 | 2124388004 | Tact Switch | 8 |
| ASW001 | 2124574009 | Power Switch | 1 |
| SW002 | 2124604005 | 2P Push Switch | 1 |
| | 2048167000 | Headphone Jack | 1 |
| A | 2020022008 | Fuse Holder | 2 |
| AF101 | 2061015032 | Fuse (2.5A) | 1 |

OTHER PARTS

| | Part No. | Part Name & Descriptions | Q'ty |
|---|------------|--------------------------|------|
| * | 2221315200 | (P.W. Board) | 1 |
| | 2090008146 | Jumper Wire P=5mm | 6 |
| | 2090008120 | Jumper Wire P=10mm | 27 |
| | EP-5667H1 | Terminal Pin | 15 |
| | 2050269006 | 8P FFC Con. Base (R) | 1 |
| | 2050269064 | 16P FFC Con. Base (R) | 1 |
| | 2050233032 | 3P EH Connector Base | 2 |
| | 2050233058 | 5P EH Connector Base | 1 |
| | 2050185025 | 2P Wire Holder | 1 |
| | 2050185038 | 3P Wire Holder | 1 |
| | 2050185041 | 4P Wire Holder | 1 |
| | 2034304026 | 3P EH Connector Cord | 1 |
| | 2090170016 | 4C Ribbon Cable | 1 |
| | 2090169001 | Vinyl Wire Ass'y | 1 |
| | 5130637021 | Fuse Label | 1 |
| | 4150299000 | Condenser Cover | 1 |

| Ref. No. | Part No. | Part Name & Descriptions | Q'ty |
|----------------|------------|-------------------------------------|------|
| SEMICONDUCTORS | | | |
| IC001 | 2650037007 | NJM-2043DD (JRC) IC | |
| IC101 | 2620276005 | HD14066BP (Hitachi) IC | |
| IC102 | 2630359006 | LC4966 (Sanyo) IC | |
| IC103 | 2620699006 | TC9164N (Toshiba) IC | |
| IC301,302 | 2630377004 | NJM2068DD (JRC) IC | |
| IC304 | 2620625009 | TC9176P (Toshiba) IC | |
| IC401 | 2630377004 | NJM2068DD (JRC) IC | |
| IC701 | 2620696106 | HD6305X0A81P (Hitachi) IC | |
| IC702 | 2620728003 | LU59002 (Sharp) IC | |
| IC703 | 2620678001 | MN1280S (Matsushita) IC | |
| IC704 | 2620575007 | HD14082BP (Hitachi) IC | |
| TR101 | 2690030006 | RN2204 (47K-47K) Digital Transistor | |
| TR102 | 2690029004 | RN1204 (47K-47K) Digital Transistor | |
| TR103, 104 | 2750041003 | 2SK108(E) FET | |
| TR403, 404 | 2730253015 | 2SC2878(A/B) Transistor | |
| TR405, 406 | 2710131021 | 2SA988(E/F) Transistor | |
| TR407, 408 | 2730235020 | 2SC1841(E/F) Transistor | |
| TR409, 410 | 2710131021 | 2SA988(E/F) Transistor | |
| TR413, 414 | 2730235020 | 2SC1841(E/F) Transistor | |
| TR419 | 2690030006 | RN2204 (47K-47K) Digital Transistor | |
| TR501, 502 | 2730198015 | 2SC1815(BL) Transistor | |
| TR503, 504 | 2730323000 | 2SC3421(O/Y) Transistor | |
| TR507, 508 | 2710195009 | 2SA1358(O/Y) Transistor | |
| TR601 | 2730198015 | 2SC1815(BL) Transistor | |
| TR602 | 2710211006 | 2SA1282A(F) Transistor | |
| TR604, 605 | 2730253015 | 2SC2878(A/B) Transistor | |
| TR606 | 2730235020 | 2SC1841(E/F) Transistor | |
| TR608, 609 | 2730198015 | 2SC1815(BL) Transistor | |
| TR610, 611 | 2690029004 | RN1204 (47K-47K) Digital Transistor | |
| TR612, 613 | 2670030006 | RN2204 (47K-47K) Digital Transistor | |
| TR614 | 2690029004 | RN1204 (47K-47K) Digital Transistor | |
| TR615, 616 | 2730281003 | 2SC2705(O)/(Y) Transistor | |
| TR617 | 2710168007 | 2SA1145(O)/(Y) Transistor | |
| TR618 | 2730198015 | 2SC1815(BL) Transistor | |
| TR619 | 2690029004 | RN1204 (47K-47K) Digital Transistor | |
| TR701 | 2690029004 | RN1204 (47K-47K) Digital Transistor | |
| TR702 | 2690030006 | RN2204 (47K-47K) Digital Transistor | |
| TR705 ~711 | 2690028005 | RN2203 (22K-22K) Digital Transistor | |
| TR715 | 2690029004 | RN1204 (47K-47K) Digital Transistor | |
| TR716 | 2690030006 | RN2204 (47K-47K) Digital Transistor | |
| SC001 | 2790016001 | SF0R1A42 Thyristor | |
| D001,002 | 2760432000 | 1SS270A Diode | |
| D301~304 | 2760432000 | 1SS270A Diode | |
| D401~406 | 2760432000 | 1SS270A Diode | |
| D411,412 | 2760432000 | 1SS270A Diode | |
| D503~506 | 2760049011 | 1S2076A Diode | |
| D507,508 | 2760432000 | 1SS270A Diode | |
| D509,510 | 2760049011 | 1S2076A Diode | |
| D511~514 | 2760432000 | 1SS270A Diode | |
| D517,518 | 2760432000 | 1SS270A Diode | |
| D527 | 2760432000 | 1SS270A Diode | |
| D601 | 2760444001 | HRP22 Schottky Diode | |
| D602,603 | 2760173084 | HZ6C-1 Zener | |
| D605~608 | 2760432000 | 1SS270A Diode | |

ETC0841E TUNER UNIT PARTS LIST (for EP1)

| Ref. No. | Part No. | Part Name & Descriptions |
|---|------------|-------------------------------------|
| D609,610 | 2760049011 | 1S2076A Diode |
| D612 | 2760236031 | H25C-1 Zener |
| D705,706 | 2760049011 | 1S2076A Diode |
| D707~712 | 2760432000 | 1S270A Diode |
| D713 | 2760049011 | 1S2076A Diode |
| D714 | 2760432000 | 1S270A Diode |
| D715 | 2760049011 | 1S2076A Diode |
| RESISTORS (no included Carbon Film ±5%, 1/4W, 1/6W Type) | | |
| AR445,446 | 2412379026 | 560 ohm ±5% 1/4W Carbon (NBS) |
| AR447,448 | 2412377044 | 100 ohm ±5% 1/4W Carbon (NBS) |
| AR453,454 | 2412379026 | 560 ohm ±5% 1/4W Carbon (NBS) |
| AR455,456 | 2412377044 | 100 ohm ±5% 1/4W Carbon (NBS) |
| AR523~526 | 2412379053 | 750 ohm ±5% 1/4W Carbon (NBS) |
| AR529,530 | 2412378027 | 220 ohm ±5% 1/4W Carbon (NBS) |
| AR533~536 | 2442013080 | 0.22 ohm ±5% 1W Metal Oxide (NB) |
| AR539~542 | 2442013080 | 0.22 ohm ±5% 1W Metal Oxide (NB) |
| AR547,548 | 2440072023 | 6.8 ohm ±5% 2W Metal Oxide (NBF) |
| AR549,550 | 2440015022 | 6.8 ohm ±5% 1W Metal Oxide (NBF) |
| AR551,552 | 2412375004 | 10 ohm ±5% 1/4W Carbon (NBS) |
| AR553 | 2412377060 | 120 ohm ±5% 1/4W Carbon (NBS) |
| AR617,618 | 2412380057 | 2 kohm ±5% 1/4W Carbon (NBS) |
| AR626 | 2440048028 | 3.9 kohm ±5% 1W Metal Oxide (NBF) |
| AR629,630 | 2412370041 | 2 kohm ±5% Carbon (NBF) |
| VR301 | 2110466008 | Variable Resistor 100 kohm Loudness |
| VR401 | 2110467007 | Variable Resistor 250 kohm Balance |
| VR403 | 2110465009 | Variable Resistor 50 kohm Treble |
| VR405 | 2110465012 | Variable Resistor 250 kohm Bass |
| VR501,502 | 2116000002 | Semi Fixed Resistor 5 kohm |
| CAPACITORS | | |
| C003,004 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C005,006 | 2533627000 | 100pF ±5% 50V Ceramic |
| C011,012 | 2561034050 | 0.068μF ±5% 50V Metalized |
| C013,014 | 2544250068 | 1000pF ±20% 6.3V Electrolytic |
| C015,016 | 2551121054 | 0.018μF ±5% 50V Plastic Film |
| C017,018 | 2533643000 | 470pF ±5% 50V Ceramic |
| C019,020 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C101 | 2531025002 | 0.022μF ±80, -20% 50V Ceramic |
| C102 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C103~108 | 2531025002 | 0.022μF ±80, -20% 50V Ceramic |
| C112,113 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C116 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C117~119 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C120~125 | 2531025002 | 0.022μF ±80, -20% 50V Ceramic |
| C126,127 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C127,128 | 2531025002 | 0.022μF ±80, -20% 50V Ceramic |
| C129,130 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C131,132 | 2531025002 | 0.022μF ±80, -20% 50V Ceramic |
| C133,134 | 2533631009 | 150pF ±5% 50V Ceramic |
| C301~304 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C305,306 | 2533627000 | 100pF ±5% 50V Ceramic |
| C307,308 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C317~320 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C321,322 | 2531025002 | 0.022μF ±80, -20% 50V Ceramic |
| C323,324 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C325,326 | 2551121054 | 0.018μF ±5% 50V Plastic Film |
| C327,328 | 2531055030 | 390pF ±10% 50V Ceramic |
| C401~404 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C405~408 | 2533627000 | 100pF ±5% 50V Ceramic |
| C409,410 | 2544254006 | 10μF ±20% 16V Electrolytic |

| Ref. No. | Part No. | Part Name & Descriptions |
|---------------|------------|----------------------------------|
| C413 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C415 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C417~420 | 2551120000 | 0.001μF ±5% 50V Plastic Film |
| C421~424 | 2533639001 | 330pF ±5% 50V Ceramic |
| C427,428 | 2551121009 | 0.0068μF ±5% 50V Plastic Film |
| C429,430 | 2533633007 | 180pF ±5% 50V Ceramic |
| C431,432 | 2551120013 | 0.0012μF ±5% 50V Plastic Film |
| C433,434 | 2561034047 | 0.056μF ±5% 50V Metalized |
| C435,436 | 2561034089 | 0.12μF ±5% 50V Metalized |
| C439,440 | 2534494009 | 100pF ±5% 500V Ceramic |
| C441,442 | 2551121067 | 0.022μF ±5% 50V Plastic Film |
| C445,446 | 2534494009 | 100pF ±5% 500V Ceramic |
| C447,448 | 2551121067 | 0.022μF ±5% 50V Plastic Film |
| C453,454 | 2551121041 | 0.015μF ±5% 50V Plastic Film |
| C455 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C457 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C458 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C461,462 | 2531025002 | 0.022μF ±80, -20% 50V Ceramic |
| C505 | 2543046008 | 1μF ±20% 100V Electrolytic (B.P) |
| C507 | 2543046008 | 1μF ±20% 100V Electrolytic (B.P) |
| C519,520 | 2531024003 | 0.01μF ±80, -20% 50V Ceramic |
| C521,522 | 2533639001 | 330pF ±5% 50V Ceramic |
| C525,526 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C527,528 | 2533639001 | 330pF ±5% 50V Ceramic |
| C529,530 | 2534498005 | 150pF ±5% 500V Ceramic |
| C535,536 | 2561034076 | 0.1μF ±5% 50V Metalized |
| C537,538 | 2551121067 | 0.022μF ±5% 50V Plastic Film |
| C539~542 | 2543046008 | 1μF ±20% 100V Electrolytic (B.P) |
| C543,544 | 2534498005 | 150pF ±5% 500V Ceramic |
| C601,602 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C603,604 | 2531024003 | 0.01μF ±80, -20% 50V Ceramic |
| C605 | 2544250045 | 1μF ±20% 50V Electrolytic |
| C606 | 2544250042 | 330pF ±20% 6.3V Electrolytic |
| C609,610 | 2551120084 | 0.0047μF ±5% 50V Plastic Film |
| C613 | 2531025002 | 0.022μF ±80, -20% 50V Ceramic |
| C614 | 2531024003 | 0.01μF ±80, -20% 50V Ceramic |
| C615~617 | 2531025002 | 0.022μF ±80, -20% 50V Ceramic |
| C618 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C619 | 2531025002 | 0.022μF ±80, -20% 50V Ceramic |
| C701 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C704 | 2533635005 | 220pF ±5% 50V Ceramic |
| C705,706 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C707 | 2531024003 | 0.01μF ±80, -20% 50V Ceramic |
| C708 | 2533635005 | 220pF ±5% 50V Ceramic |
| C709~711 | 2531055056 | 220pF ±10% 50V Ceramic |
| C713 | 2531055056 | 220pF ±10% 50V Ceramic |
| C716 | 2544252037 | 100μF ±20% 10V Electrolytic |
| C717,718 | 2531024003 | 0.01μF ±80, -20% 50V Ceramic |
| C719 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C720 | 2531024003 | 0.01μF ±80, -20% 50V Ceramic |
| C721 | 2544260044 | 1μF ±20% 50V Electrolytic |
| C723 | 2531024003 | 0.01μF ±80, -20% 50V Ceramic |
| C725 | 2531025002 | 0.022μF ±80, -20% 50V Ceramic |
| C726 | 2531024003 | 0.01μF ±80, -20% 50V Ceramic |
| C777 | 2531024003 | 0.01μF ±80, -20% 50V Ceramic |
| E.U.P. | | |
| L501,502 | 2359001004 | Inductor |
| XL701 | 3990034002 | OSC Element (CST4.00MG) |
| XL702 | 2610037005 | OSC Element (CSB455E) |
| SW003 | 2124607002 | 2P Push SW. (Phono. Mode) |
| SW004 | 2124462001 | 1P Push SW. (Tuner. Mode) |
| RL501 | 2140037009 | Relay |

| Ref. No. | Part No. | Part Name & Descriptions | Q'ty |
|--------------------|------------|----------------------------|------|
| OTHER PARTS | | | |
| | 2223137208 | (P.W. Board) | 1 |
| | 2090008146 | Jumper Wire P=5mm | 12 |
| | 2090008120 | Jumper Wire P=10mm | 98 |
| | EP-5667H1 | Terminal Pin | 18 |
| | 2050152003 | 6P Connector Base | 3 |
| | 2050298048 | 9P FFC Con. Base (S) | 1 |
| | 2050298019 | 16P FFC Con. Base (S) | 1 |
| | 2050185038 | 3P Wire Holder | 14 |
| | 2050185041 | 4P Wire Holder | 1 |
| | 2050185054 | 5P Wire Holder | 1 |
| | 2050185067 | 6P Wire Holder | 2 |
| | 2050185070 | 7P Wire Holder | 1 |
| | 2050185025 | 2P Wire Holder | 3 |
| | 2050271094 | 9P PH Connector Base | 1 |
| | 2042171018 | 7P Connector Cord | 1 |
| | 2042171006 | 7P EH Connector Cord | 1 |
| | 2038186008 | 5P EH Connector Cord | 1 |
| | 2036156023 | 4P EH Connector Cord | 1 |
| | 2034340006 | 3P EH Connector Cord | 1 |
| | 2034353008 | 3P EH Connector Cord Ass'y | 1 |
| | 2034304013 | 3P EH Connector Cord | 1 |
| | 2034338005 | 3P EH Connector Cord | 1 |
| | 2090121023 | T.S.W. Ass'y | 1 |
| | 2090121036 | T.S.W. Ass'y | 1 |
| | 2090121049 | T.S.W. Ass'y | 1 |
| | 2090172001 | T.S.W. Ass'y | 1 |
| | 2090121065 | T.S.W. Ass'y | 1 |
| | 2090146008 | 2C Shield Wire | 1 |
| | 2090146011 | 2C Shield Wire | 1 |
| | 2090151006 | 2C Ribbon Cable | 1 |
| | 2090153004 | Vinyl Wire | 1 |
| | 2090153020 | Vinyl Wire | 1 |
| | 2090153033 | Vinyl Wire | 1 |
| | 2090164035 | T.S.W. Contact Ass'y | 1 |
| | 2090164048 | T.S.W. Contact Ass'y | 1 |

| Ref. No. | Part No. | Part Name & Descriptions |
|-----------------------|------------|--------------------------|
| SEMICONDUCTORS | | |
| IC100 | 2630414006 | LA1222 (Sanyo) IC |
| IC101 | 2630083000 | HA11225 (Hitachi) IC |
| IC102 | 2630384000 | μPC1235C (NEC) IC |
| IC103 | 2630145003 | LA1245 (Sanyo) IC |
| IC104 | 2630232000 | TD6104P (Toshiba) IC |
| IC105 | 2620452104 | TC9147BP (Sanyo) IC |
| IC106 | 2630371000 | LB1403N (Toshiba) IC |
| IC107 | 2620300007 | HD14011BP (Hitachi) IC |
| IC108 | 2620276005 | HD14066BP (Hitachi) IC |
| IC600 | 2630459003 | L78M05ML (JRC) IC |
| IC700 | 2620700005 | TMS1035NE (T.I.) IC |
| IC701 | 2620453006 | TD6301AP (Toshiba) IC |
| TR101 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR102 | 2750051006 | 2SK161(IGR) FET |
| TR103 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR104 | 2730222004 | 2SK3651(IGR) FET |
| TR105 | 2730053004 | 2SK3651(IGR) FET |
| TR106 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR107 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR108 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR109 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR110 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR111 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR112 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR113 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR114 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR115 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR116 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR117 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR118 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR119 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR120 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR121 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR122 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR123 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR124 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR125 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR126 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR127 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR128 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR129 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR130 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR131 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR132 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR133 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR134 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR135 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR136 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR137 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR138 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR139 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR140 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR141 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR142 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR143 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR144 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR145 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR146 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR147 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR148 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR149 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR150 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR151 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR152 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR153 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR154 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR155 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR156 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR157 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR158 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR159 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR160 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR161 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR162 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR163 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR164 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR165 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR166 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR167 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR168 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR169 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR170 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR171 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR172 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR173 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR174 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR175 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR176 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR177 | 2710194000 | 2SA1048(Y/GR) Transistor |
| TR178 | 2730222004 | 2SC2458(Y/GR) Transistor |
| TR179 | 2710194000 | 2SA1048(Y/GR) Transistor |

ETC0840B P. SUPPLY & CONTROL UNIT
PARTS LIST (for EP1)

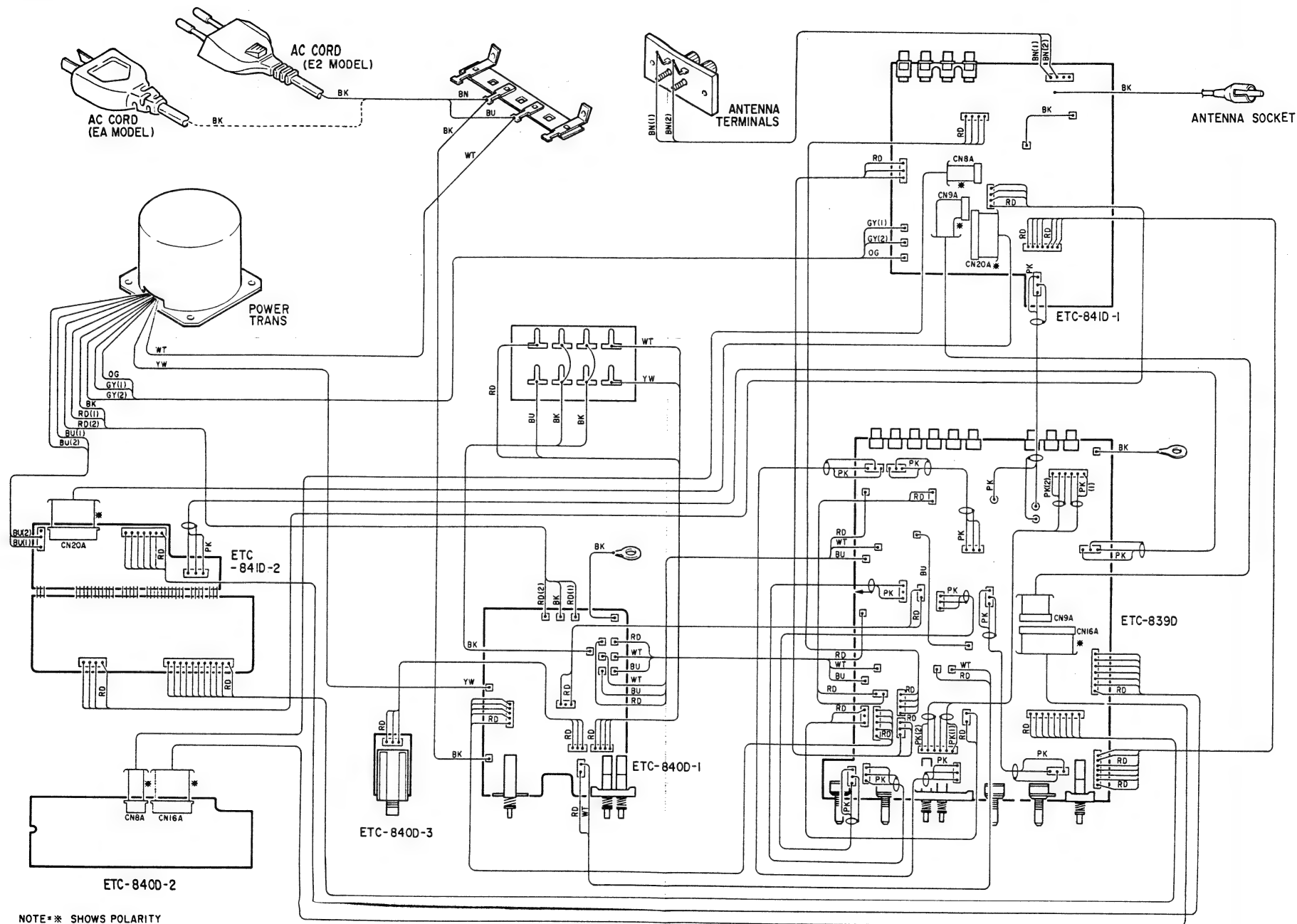
| Ref. No. | * Part No. | Part Name & Descriptions |
|-------------------|------------|--------------------------------------|
| VR100 | 2116000002 | Semi Fixed Resistor 5 kohm |
| VR101 | 2116000028 | Semi Fixed Resistor 100 kohm |
| CAPACITORS | | |
| C100 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C102 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C103~109 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C111 | 2544254019 | 22μF ±20% 16V Electrolytic |
| C112 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C113 | 2544260032 | 0.47μF ±20% 50V Electrolytic |
| C114 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C115 | 2544260045 | 1μF ±20% 50V Electrolytic |
| C116 | 2533629008 | 120pF ±5% 50V Ceramic |
| C117~119 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C120 | 2544254048 | 100μF ±20% 16V Electrolytic |
| C121 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C124 | 2544254051 | 220μF ±20% 16V Electrolytic |
| C125 | 2544260061 | 3.3μF ±20% 50V Electrolytic |
| C126 | 2544260058 | 2.2μF ±20% 50V Electrolytic |
| C127 | 2544260032 | 0.47μF ±20% 50V Electrolytic |
| C128 | 2556091008 | 470pF ±5% 50V Plastic Film |
| C129 | 2561034034 | 0.047μF ±5% 50V Metalized |
| C130,131 | 2539030028 | 2200pF ±10% 25V Ceramic |
| C132,133 | 2544214006 | 10μF ±10% 16V Electrolytic |
| C135,136 | 2544260058 | 2.2μF ±20% 50V Electrolytic |
| C137 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C138 | 2533635005 | 220pF ±5% 50V Ceramic |
| C139 | 2533609002 | 18pF ±5% 50V Ceramic |
| C140 | 2554201049 | 390pF ±5% 50V Plastic Film |
| C141 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C142 | 2531004007 | 1000pF ±10% 50V Ceramic |
| C143 | 2531025002 | 0.022μF +80,-20% 50V Ceramic |
| C144,145 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C146 | 2533619005 | 47pF ±5% 50V Ceramic |
| C147 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C148 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C149 | 2531004007 | 1000pF ±10% 50V Ceramic |
| C150,151 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C152 | 2544260061 | 3.3μF ±20% 50V Electrolytic |
| C153 | 2544258002 | 4.7μF ±20% 35V Electrolytic |
| C154,155 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C156 | 2544254035 | 47μF ±20% 16V Electrolytic |
| C157 | 2531025002 | 0.022μF +80,-20% 50V Ceramic |
| C158 | 2544228061 | 1μF ±20% 50V Electrolytic (Low leak) |
| C159 | 2544214020 | 1μF ±20% 50V Electrolytic (B.F.) |
| C160 | 2531025002 | 0.022μF +80,-20% 50V Ceramic |
| C161 | 2544254048 | 100μF ±20% 16V Electrolytic |
| C162 | 2544252024 | 47μF ±20% 10V Electrolytic |
| C163~167 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C168 | 2590004006 | 22000μF 5.5V for Backup |
| C169 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C170,171 | 2533599002 | 6pF ±0.5pF 50V Ceramic |
| C172~175 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C176,177 | 2544260058 | 2.2μF ±20% 50V Electrolytic |
| C178,179 | 2544260032 | 0.47μF ±20% 50V Electrolytic |
| C180,181 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C182 | 2544260032 | 0.47μF ±20% 50V Electrolytic |
| C183 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C185 | 2544252024 | 47μF ±20% 10V Electrolytic |
| C187,188 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C189 | 2544254035 | 47μF ±20% 16V Electrolytic |

| Ref. No. | * Part No. | Part Name & Descriptions |
|--------------------|--------------|------------------------------|
| C190 | 2544254077 | 470μF ±20% 16V Electrolytic |
| C191 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C192 | 2544254077 | 470μF ±20% 16V Electrolytic |
| C193 | 2544254080 | 1000μF ±20% 16V Electrolytic |
| C194 | 2544254035 | 47μF ±20% 16V Electrolytic |
| C195 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C197 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C600 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C601 | 2544256046 | 100μF ±20% 25V Electrolytic |
| C602 | 2544258099 | 1000μF ±20% 35V Electrolytic |
| C603,604 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C605,606 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C607 | 2544254093 | 2200μF ±20% 16V Electrolytic |
| C608 | 2544254048 | 100μF ±20% 16V Electrolytic |
| C609 | 2544254006 | 10μF ±20% 16V Electrolytic |
| C610 | 2544254077 | 470μF ±20% 16V Electrolytic |
| C611 | 2544250013 | 47μF ±20% 6.3V Electrolytic |
| C700~702 | 2531006005 | 2200pF ±10% 50V Ceramic |
| C703 | 2531024003 | 0.01μF +80,-20% 50V Ceramic |
| C704,705 | 2533639001 | 330pF ±5% 50V Ceramic |
| C706 | 2531025002 | 0.022μF +80,-20% 50V Ceramic |
| TC100 | 2130022008 | Trimmer Condenser |
| COIL, TRANS | | |
| L100 | 2350026020 | Inductor 10μH |
| T100 | 2312901002 | FM IF Det (A) (50kHz) |
| T101 | 2312902001 | FM IF Det (B) (50kHz) |
| T103 | 2313026009 | AM IFT |
| T104 | 2314901000 | MW OSC. Coil |
| T105 | 2311113008 | MW Ant. Coil |
| LP101, 102 | 2320085004 | Low Pass Filter |
| CF100 | 2610078006 | FM C. Filter (SFE10.7MM) |
| CF102 | 2610078006 | FM C. Filter (SFE10.7MM) |
| CF103 | 2610031001 | AM C. Filter (BFU450C4) |
| CF104 | 2610065006 | AM C. Filter (SFZ450F3L) |
| E.U.P. | | |
| | | Q'ty |
| X100 | 2160041004 | Front End |
| | 3934022009 | FIP788GS FLD |
| | 3990040009 | X-tal (7.2MHz) |
| | 4990049009 | RM-577 (Remote Control) |
| | 2048178002 | 1P Pin Jack |
| | 2020022008 | Fuse Holder |
| | 2124293005 | Slide Switch |
| OTHER PARTS | | |
| | | Q'ty |
| | (2221313202) | P.W. Board |
| | 2090008146 | Jumper Wire P=5mm |
| | 2090008120 | Jumper Wire P=10mm |
| | EP-5667H1 | Terminal Pin |
| | 4178028101 | Heat Sink |
| | 4713304015 | Bind Screw 3x8 |
| | 2030262007 | Ant. Pin Cord Ass'y |
| | 2050240009 | 3P Connector Base |
| | 2050185041 | 4P Wire Holder |
| | 1460822209 | LED Holder (A) |
| | 1460821200 | LED Holder (B) |
| | 4610294008 | Rubber Sheet |
| | 2050233074 | 7P EH Connector Base |
| | 2050233074 | 4P EH Connector Base |
| | 2050233032 | 3P EH Connector Base |
| | 2050271049 | 4P PH Connector Base |
| | 2050271078 | 7P PH Connector Base |
| | 2050241037 | 3P Connector Pin Ass'y |

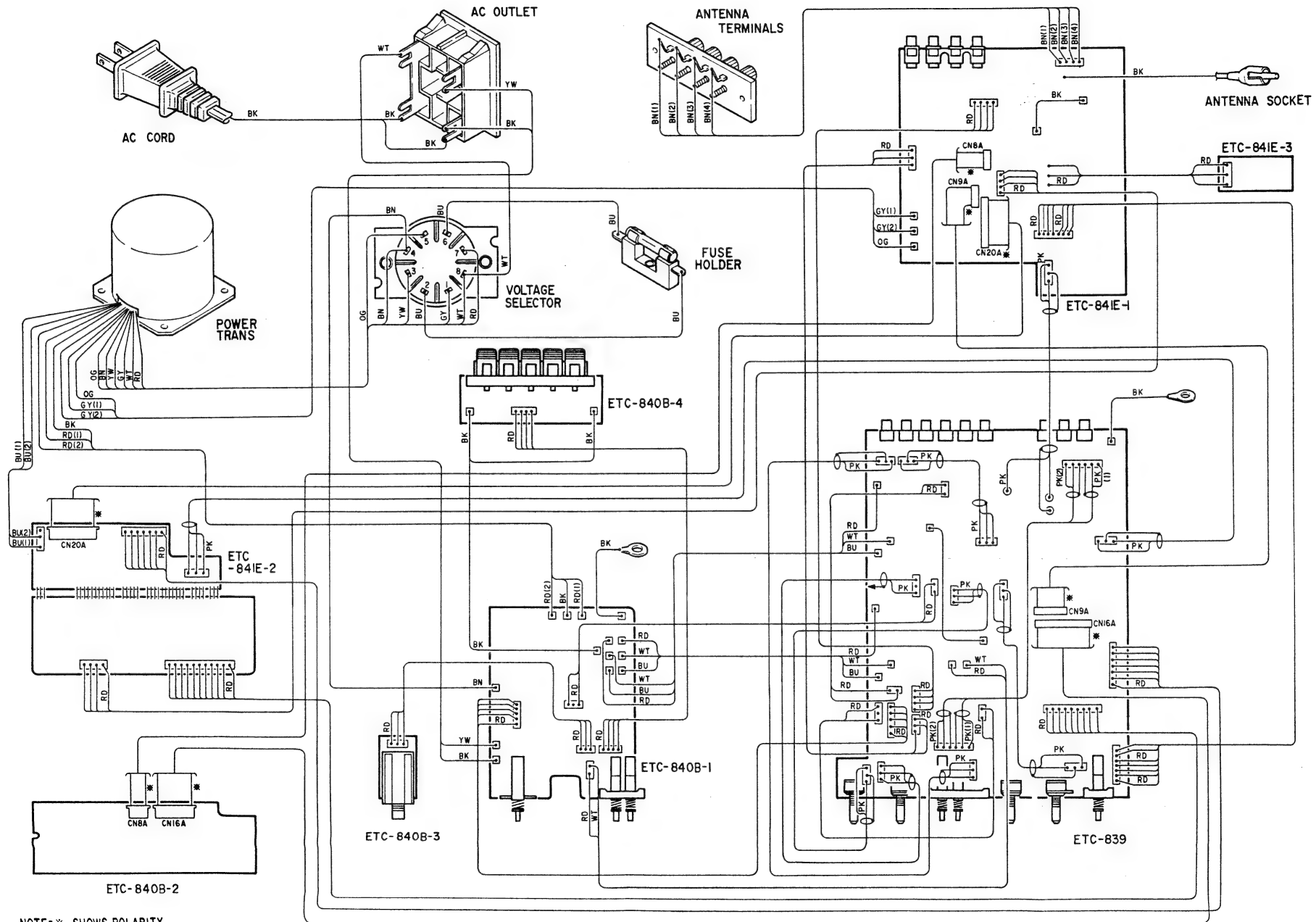
| Ref. No. | * Part No. | Part Name & Descriptions | Q'ty |
|----------|------------|--------------------------|------|
| | 2050298051 | 20P FFC Con. Base (S) | 2 |
| | 2050298048 | 9P FFC Con. Base (S) | 1 |
| | 2050298035 | 8P FFC Con. Base (S) | 1 |
| | 2042172004 | 9P Connector Cord | 1 |
| | 2036172007 | 4P Connector Cord | 1 |
| | 4150309013 | P.V.C. Tube | 4 |
| | 2090154003 | Vinyl Wire | 1 |
| | 2090154016 | Vinyl Wire | 4 |
| | 2090168015 | Shield Wire Ass'y | 1 |
| | | | |

| Ref. No. | * Part No. | Part Name & Descriptions | Q'ty |
|--|--------------|-------------------------------------|------|
| SEMICONDUCTORS | | | |
| TR101 | 2710206008 | 2SA1488(Y)/(G) Transistor | 1 |
| TR102 | 2730187039 | 2SC2240(BL/GR) Transistor | 1 |
| TR103 | 2710094032 | 2SA970(BL/GR) Transistor | 1 |
| TR104 | 2730338008 | 2SC3851(Y)/(G) Transistor | 1 |
| TR106 | 2730338008 | 2SC3851(Y)/(G) Transistor | 1 |
| TR107 | 2710102021 | 2SA1015(GR) Transistor | 1 |
| TR108 | 2710206008 | 2SA1488(Y)/(G) Transistor | 1 |
| D101 | 2760427015 | DSA1A2 (Type-3) Diode | 1 |
| D103 | 2760427015 | DSA1A2 (Type-3) Diode | 1 |
| D104 | 2760221020 | HZ36-3 Zener | 1 |
| D105 | 2760225008 | HZ16-2 Zener | 1 |
| D106 | 2760221020 | HZ36-3 Zener | 1 |
| D107 | 2760424005 | 4D4842(LC1) Diode | 1 |
| D200~203 | 2760370007 | 1S5106TD Diode | 1 |
| RESISTORS (not included Carbon Film ±5%, 1/4W, 1/4W Type) | | | |
| AR110 | 2440093028 | 390 ohm ±5% 2W Metal Oxide (NBF) | 1 |
| AR118 | 2440093028 | 390 ohm ±5% 2W Metal Oxide (NBF) | 1 |
| AR119,120 | 2412387047 | 4.7 ohm ±5% 1/4W Carbon (NBS) | 1 |
| R121 | 2420073000 | 2.2 Mohm ±10% 1/2W Carbon Composite | 1 |
| AR127,128 | 2440033020 | 220 ohm ±5% 1W Metal Oxide (NBF) | 1 |
| CAPACITORS | | | |
| C100 | 2544263042 | 1μF ±20% 100V Electrolytic | 1 |
| C103,104 | 2544260045 | 1μF ±20% 50V Electrolytic | 1 |
| C105 | 2544261015 | 47μF ±20% 50V Electrolytic | 1 |
| C106 | 2533619005 | 47pF ±5% 50V Ceramic | 1 |
| C107 | 2531055014 | 560pF ±10% 50V Ceramic | 1 |
| C109 | 2544216002 | 9200μF ±20% 63V Electrolytic | 1 |
| C111 | 2544216002 | 9200μF ±20% 63V Electrolytic | 1 |
| C112,113 | 2531053003 | 0.01μF +100,-0% 500V Ceramic | 1 |
| AC114 | 2538014003 | 0.01μF ±20% 400V Ceramic(AC) | 1 |
| C119 | 2544260045 | 1μF ±20% 50V Electrolytic | 1 |
| C120 | 2544089022 | 100μF ±20% 50V Electrolytic | 1 |
| C801 | 2531024503 | 0.01μF +80,-20% 50V Ceramic | 1 |
| E.U.P. | | | |
| | | Q'ty | |
| S200~214 | 2124388004 | Tact Switch | 15 |
| S218~225 | 2124388004 | Tact Switch | 8 |
| ASW001 | 2124574009 | Power Switch | 1 |
| SW002 | 2124604005 | 2P Push Switch | 1 |
| | 2048167000 | Headphone Jack | 1 |
| | 2050254008 | Terminal Board (8P) For SP. | 1 |
| A | 2020022008 | Fuse Holder | 2 |
| AF101 | 2061046001 | Fuse (3A) UL (20mm) | 1 |
| OTHER PARTS | | | |
| | | Q'ty | |
| | (2221313200) | P.W. Board | 1 |
| | 2090008146 | Jumper Wire P=5mm | 6 |
| | 2090008120 | Jumper Wire P=10mm | 28 |
| | EP-5667H1 | Terminal Pin | 17 |
| | 2050269006 | 8P FFC Con. Base (R) | 1 |
| | 2050269064 | 16P FFC Con. Base (R) | 1 |
| | 2050233032 | 3P EH Connector Base | 2 |
| | 2050233058 | 5P EH Connector Base | 1 |
| | 2050185025 | 2P Wire Holder | 1 |
| | 2050185038 | 3P Wire Holder | 1 |
| | 2050185041 | 4P Wire Holder | 2 |
| | 2034304026 | 3P EH Connector Cord | 1 |
| | 2090170003 | 4C Ribbon Cable | 1 |
| | 2090169001 | Vinyl Wire Ass'y | 1 |

WIRING DIAGRAM (for E2, EA)



WIRING DIAGRAM (for EP1)



NOTE: * SHOWS POLARITY



EXPLODED VIEW OF PARTS LIST

| Ref. No. | Part No. | Part Name & Descriptions | Q'ty |
|----------|------------|--|------|
| 1 | 4110568108 | FRONT CHASSIS ASS'Y | 1 |
| 2 | 1460820308 | LED FRAME | 1 |
| 3 | 4770096007 | PUSH RIVET | 5 |
| 4 | 4150313009 | P.C.B. SUPPORT | 1 |
| 5 | 4110569301 | TRANS CHASSIS | 1 |
| 6 | 4121979029 | P.C.B. HOLDER | 4 |
| 7 | ETC0840D | P. SUPPLY & CONTROL UNIT | 1s |
| 8 | 4119020508 | SIDE CHASSIS | 1 |
| 9 | ETC0839D | POWER UNIT | 1s |
| 10 | — | — | 1 |
| 11 | — | — | 1s |
| 12 | 1050726003 | BACK PANEL | 1 |
| 13 | 2050215005 | ANTENNA TERMINAL | 1 |
| 14 | 2050071016 | TERMINAL ASS'Y | 1 |
| 15 | 2050165003 | 2P TERMINAL | 1 |
| 16 | 2062002031 | AC CORD | 1 |
| 17 | 2538014003 | CAPACITOR 0.01μF/400V (AC) | 1 |
| 18 | 4450056008 | CORD BUSH | 1 |
| 19 | 1460494006 | ANTENNA HOLDER | 1 |
| 20 | 4170272104 | POWER RADIATOR | 1 |
| 21 | 4129044008 | BRACKET | 1 |
| 22 | 2730336000 | TRANSISTOR 2SC3854(O)/(Y) | 2 |
| 23 | 2710204000 | TR505,506 TRANSISTOR 2SA1490(O)/(Y) | 2 |
| 24 | 4122022205 | RADIATOR BRACKET | 1 |
| 25 | 1059044207 | BOTTOM COVER | 1 |
| 26 | 1040128006 | FOOT | 4 |
| 27 | 4140411005 | SAFETY PLATE | 2 |
| 28 | 2335591004 | POWER TRANS. | 1 |
| 29 | 4122021002 | SHIELD PLATE | 1 |
| 30 | 4121979032 | P.C.B. HOLDER | 3 |
| 31 | ETC0841D | TUNER UNIT | 1s |
| 32 | 2050073001 | SHORT PIN | 2 |
| 33 | 1438044103 | WINDOW (C) | 1 |
| 34 | 1430470005 | FILTER | 1 |
| 35 | 1410294201 | DISPLAY SHEET | 1 |
| 36 | 1120487201 | KNOB ASS'Y | 3 |
| 37 | 1120487214 | KNOB ASS'Y | 1 |
| 38 | 1139071006 | PUSH KNOB (T) | 5 |
| 39 | 1139070104 | PUSH KNOB (P) | 1 |
| 40 | 1441479406 | FRONT PANEL ASS'Y | 1 |
| 41 | 1430466006 | WINDOW | 1 |
| 42 | 1130811126 | PUSH KNOB ASS'Y | 1 |
| 43 | 4150342106 | WIRE HOLDER | 1 |
| 44 | 4450048003 | CORD HOLDER (ø: 76mm) | 7 |
| 45 | 4450033005 | WIRE CLAMP BAND | 30 |
| 46 | 1029013404 | TOP COVER | 1 |
| 47 | 2030289006 | 1P CONTACT ASS'Y | 1 |
| 48 | 2030289019 | 1P CONTACT ASS'Y | 1 |
| 49 | 4122062003 | SHIELD BRACKET | 1 |
| 50 | 2090153075 | VINYL WIRE | 2 |
| 51 | 4410733002 | CORNER BRACKET | 1 |
| 52 | 2090153062 | VINYL WIRE | 1 |
| 53 | 4610294024 | RUBBER SHEET | 1 |
| 54 | 1229006017 | SPACER | 1 |
| 55 | 4619001001 | RUBBER SHEET | 2 |
| 56 | 4150374006 | INSULATING SHEET | 1 |
| 57 | 2050089011 | 7P W TERMINAL | 1 |
| 58 | 2050186008 | 8P SP TERMINAL | 1 |
| 59 | 2551120084 | CAPACITORS 0.0047μF/50V (C-151 ~ 154) | 4 |
| 60 | 2090116038 | 16P FFC | 1 |
| 61 | 2090145012 | 8P FHC | 1 |
| 62 | | | |

NOTE: 1. See addendum list next page for the parts with asterisk (*) on the Ref. No. and the other parts not included in the list.

2. * Mark not included EXPLODED VIEW.

3. The list is prepared based on E2 for Black Version.

4. * indicates the parts newly used in this unit.

E2 Gold Version PARTS LIST
(Same as E2 BLACK VERSION (Left P/List)
except the followings.)

| Ref. No. | Part No. | Part Name & Descriptions | Q'ty |
|----------|------------|--------------------------|------|
| 37 | 1120487227 | KNOB ASS'Y | 3 |
| 38 | 1120487230 | KNOB ASS'Y | 1 |
| 39 | 1139071019 | PUSH KNOB (T) | 5 |
| 40 | 1139070117 | PUSH KNOB (P) | 1 |
| 41 | 1441479435 | FRONT PANEL ASS'Y | 1 |
| 43 | 1130811139 | PUSH KNOB ASS'Y | 1 |
| 47 | 1029013420 | TOP COVER | 1 |
| 107 | 4737014006 | TAPPING SCREW (S) 4x8 | 6 |
| 205 | 5011117042 | CARTON CASE | 1 |
| 210 | 5139111001 | COLOR LABEL (GOLD) | 2 |

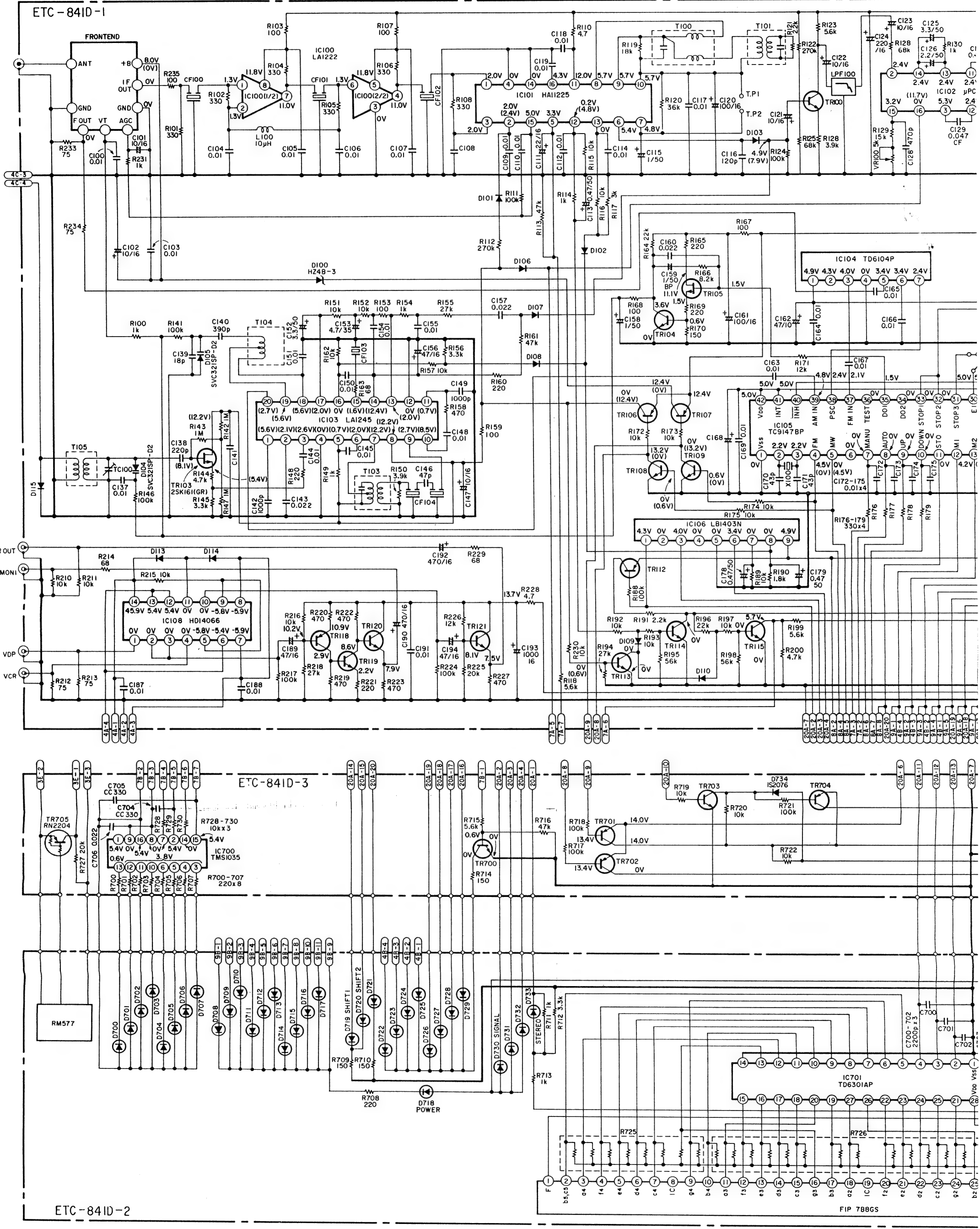
| Ref. No. | Part No. | Part Name & Descriptions | Q'ty |
|---|------------|---|------|
| 63 | 2090143001 | 20P FHC | 1 |
| 64 | 2090144000 | 9P FHC | 1 |
| *65 | 2531024003 | CERAMIC CAPACITOR 0.01μF/50V (C-612) | 1 |
| *66 | 2090153088 | VINYL WIRE | 2 |
| SCREWS | | | |
| 101 | 4737002021 | TAPPING SCREW (S) 3x8 BLACK | 9 |
| 102 | 4737002034 | TAPPING SCREW (S) 3x6 BLACK | 42 |
| 103 | 4770018001 | WASHER (P-87) | 1 |
| 104 | 4737500044 | TAPPING SCREW (P) 3x8 BLACK | 10 |
| 105 | 4700012022 | PAN SCREW WITH W.SW 3x12 | 4 |
| 106 | 4737004016 | TAPPING SCREW (S) 4x6 | 4 |
| 107 | 4737007000 | TAPPING SCREW (S) 4x8 BLACK | 6 |
| 108 | 4730354019 | TAPPING SCREW 3x8 | 2 |
| 109 | 2050003107 | 3T LUG | 1 |
| 110 | 4770064107 | FIXING SCREW | 2 |
| 111 | 4770276005 | EARTH SCREW | 2 |
| PACKING & ACCESSORIES (not including EXPLODED VIEW) | | | |
| 201 | 5049102003 | STYLEN PAPER | 1 |
| 202 | 5059102006 | POLYCOVER | 1 |
| 203 | 5030552109 | CUSHION | 2 |
| 204 | 4990051000 | REMOTE CONTROL (RC-75) | 1 |
| 205 | 5011117039 | CARTON CASE | 1 |
| 206 | 5050061007 | ENVELOPE | 1 |
| 207 | 5111504005 | INST. MANUAL | 1 |
| 208 | 2311060009 | LOOP ANTENNA | 1 |
| 209 | 3950005107 | FM ANT. ASS'Y | 1 |
| 210 | 8139111014 | COLOR LABEL (BLACK) | 2 |
| 211 | 5101167008 | CONTROL CARD | 1 |
| 212 | 5290040008 | FM ANT. ADAPTOR | 1 |

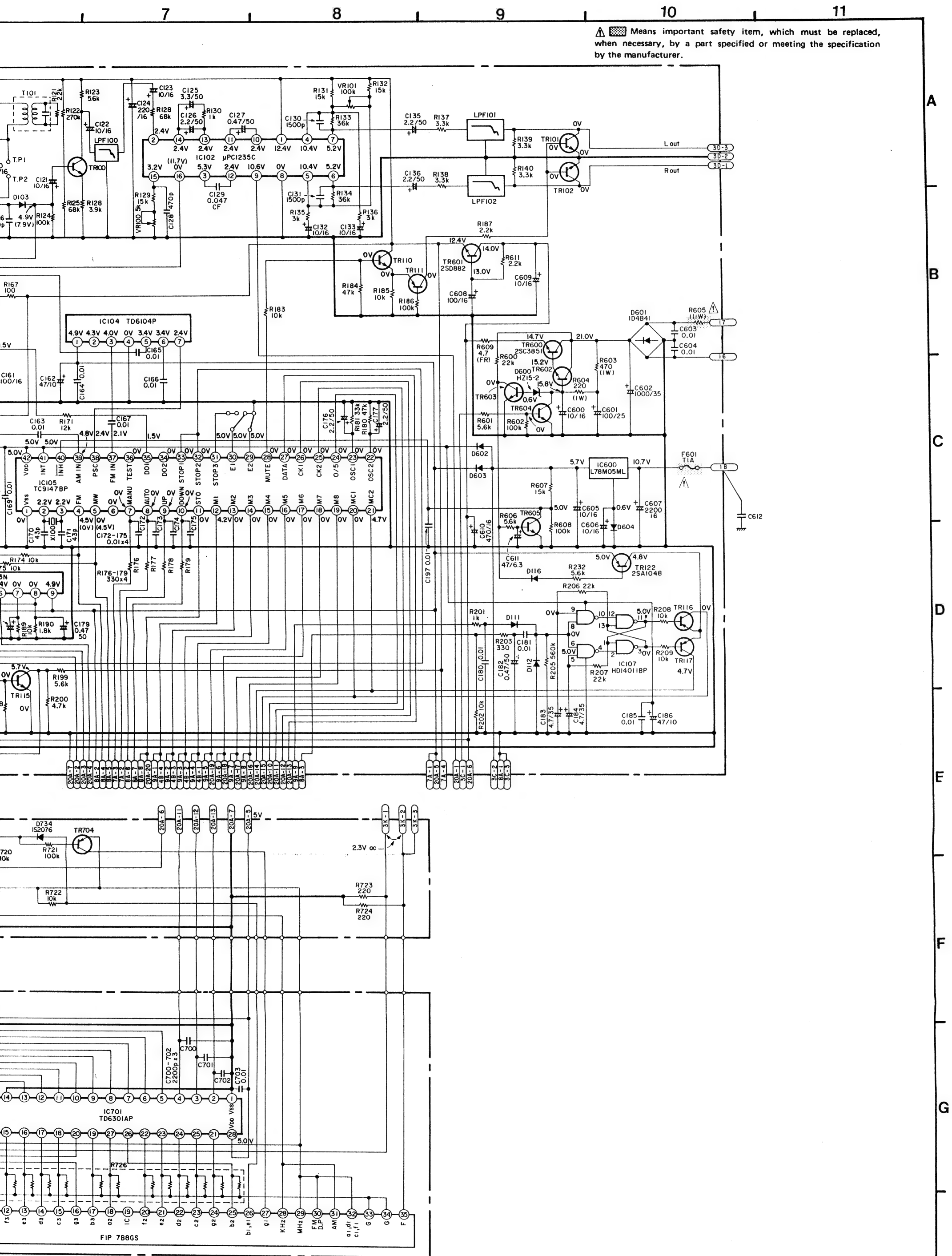
ADDENDUM LIST

| Ref. No. | Part Name & Descriptions | Part No. | | | |
|-------------|--|------------------|----------------|--|--|
| | | EA for Australia | EP1 for Asia | | |
| 7 | P. SUPPLY & CONT. UNIT | ETC0840D | ETC0840B | | |
| 9 | POWER UNIT | ETC0839D | ETC0839 | | |
| 12 | BACK PANEL | 1050726016 | 1050676056 | | |
| 13 | ANTENNA TERMINAL | 2050215005 | — | | |
| 15 | (n)P TERMINAL | 2050165003(2P) | 2050050008(4P) | | |
| Δ 16 | AC OUTLET | — | 2033924009 | | |
| Δ 17 | AC CORD | 2062025005 | 2006031026 | | |
| Δ 29 | POWER TRANS | 2335592003 | 2335597008 | | |
| 32 | TUNER UNIT | ETC0841D | ETC0841E | | |
| *51 | VINYL WIRE | 2090153017 | 2090153017 | | |
| 54 | RUBBER SHEET | 4610294024 | 4619001027 | | |
| 58 | 7P W TERMINAL | 2050089008 | — | | |
| 59 | 8P SP TERMINAL | 2050186008 | — | | |
| *60 | CAPACITOR 0.0047μF/50V (C151 ~ 154) | — | — | | |
| *66 | VINYL WIRE | — | — | | |
| *70 | F-RCA CONNECTOR | — | 2050313004 | | |
| Δ *71 | VOLTAGE SEL. SW | — | 2120186006 | | |
| Δ *72 | FUSE HOLDER | — | 2020013101 | | |
| *73 | FUSE LABEL | 5130637034 | 5131083072 | | |
| *74 | PRESET LABEL | — | 5150290008 | | |
| *75 | DANGEROUS MARK | — | 5138266009 | | |
| *76 | NOTICE SHEET | 5130212006 | — | | |
| 102 | TAPPING SCREW (S) 3x6 BLACK | 4737002034(42) | 4737002034(44) | | |
| 205 | CARTON CASE | 5011117039 | 5011117000 | | |
| 207 | INST. MANUAL | 5111504005 | 5111443108 | | |
| 210 | COLOR LABEL (BLACK) | 5139111014 | — | | |
| 211 | CONTROL CARD | 5131167008 | — | | |
| 212 | FM ANT. ADAPTOR | 5290040008 | — | | |
| 215 | R.C.C. LABEL | — | 5131198006 | | |
| 216 | INSTRUCTION SHEET | — | 5111511001 | | |

SCHEMATIC DIAGRAM (for E2, EA)
TUNER SECTION

2 3 4 5 6 7

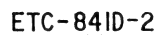




NOTES:

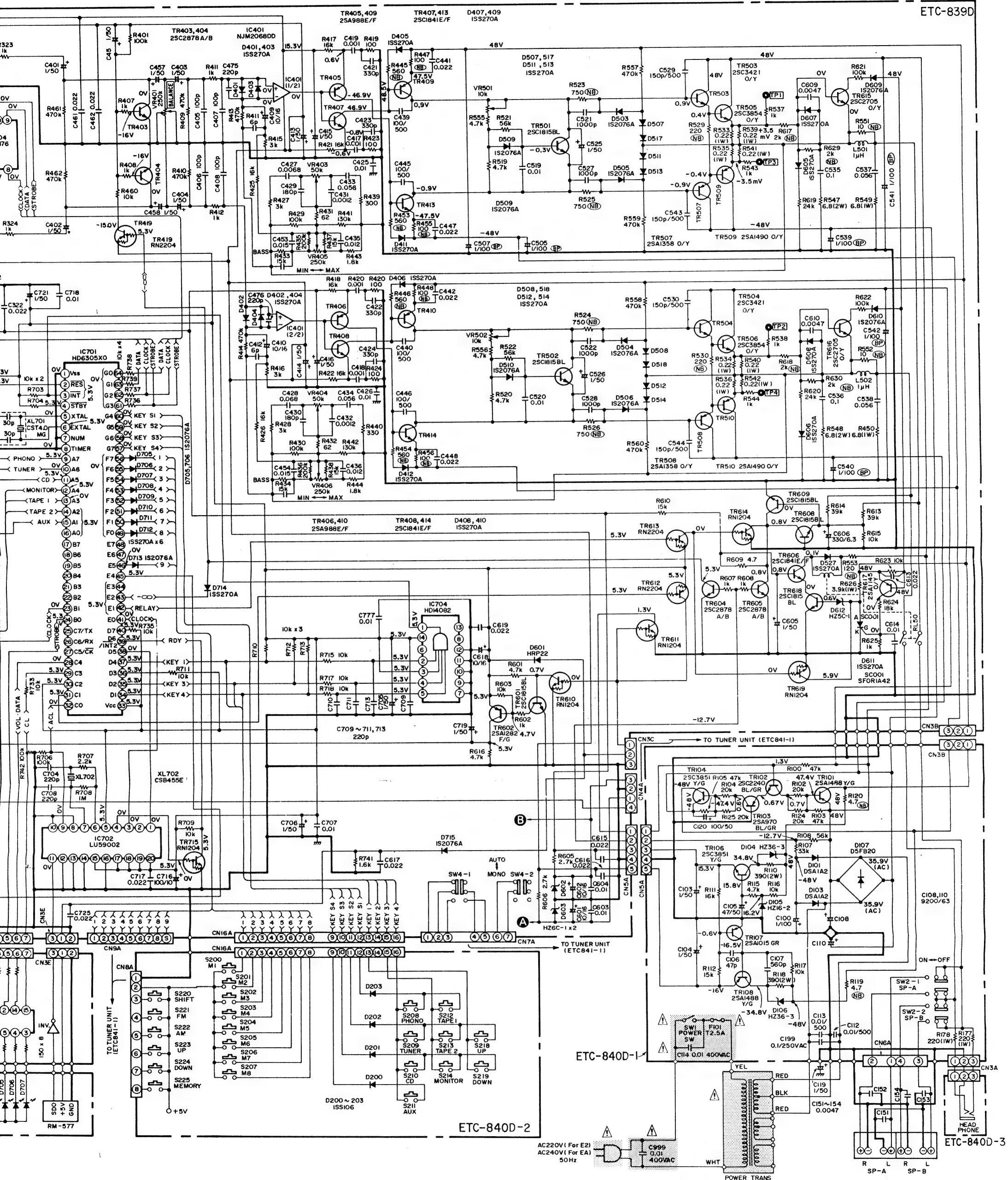
ALL RESISTANCE VALUES IN OHM, K = 1,000 OHM, M = 1,000,000 OHM.
 ALL CAPACITANCE VALUES IN MICROFARAD, P = MICRO-MICRO FARAD.
 EVERY VOLTAGES AND CURRENTS IS MEASURED AT NO SIGNAL INPUT CONDITION.
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

AMP. RECT. SECTION

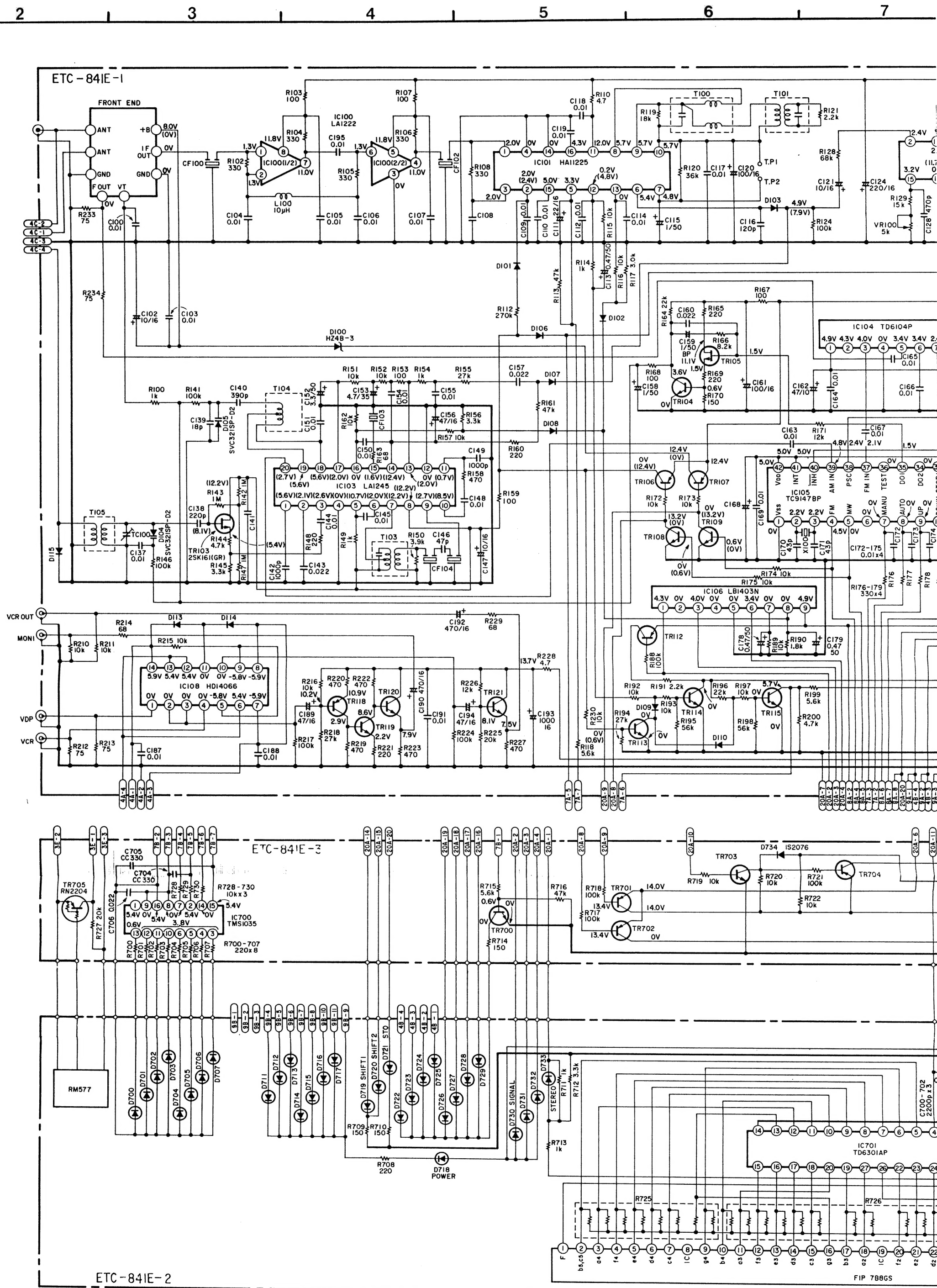


⚠ Means important safety item, which must be replaced, when necessary, by a part specified or meeting the specification by the manufacturer.

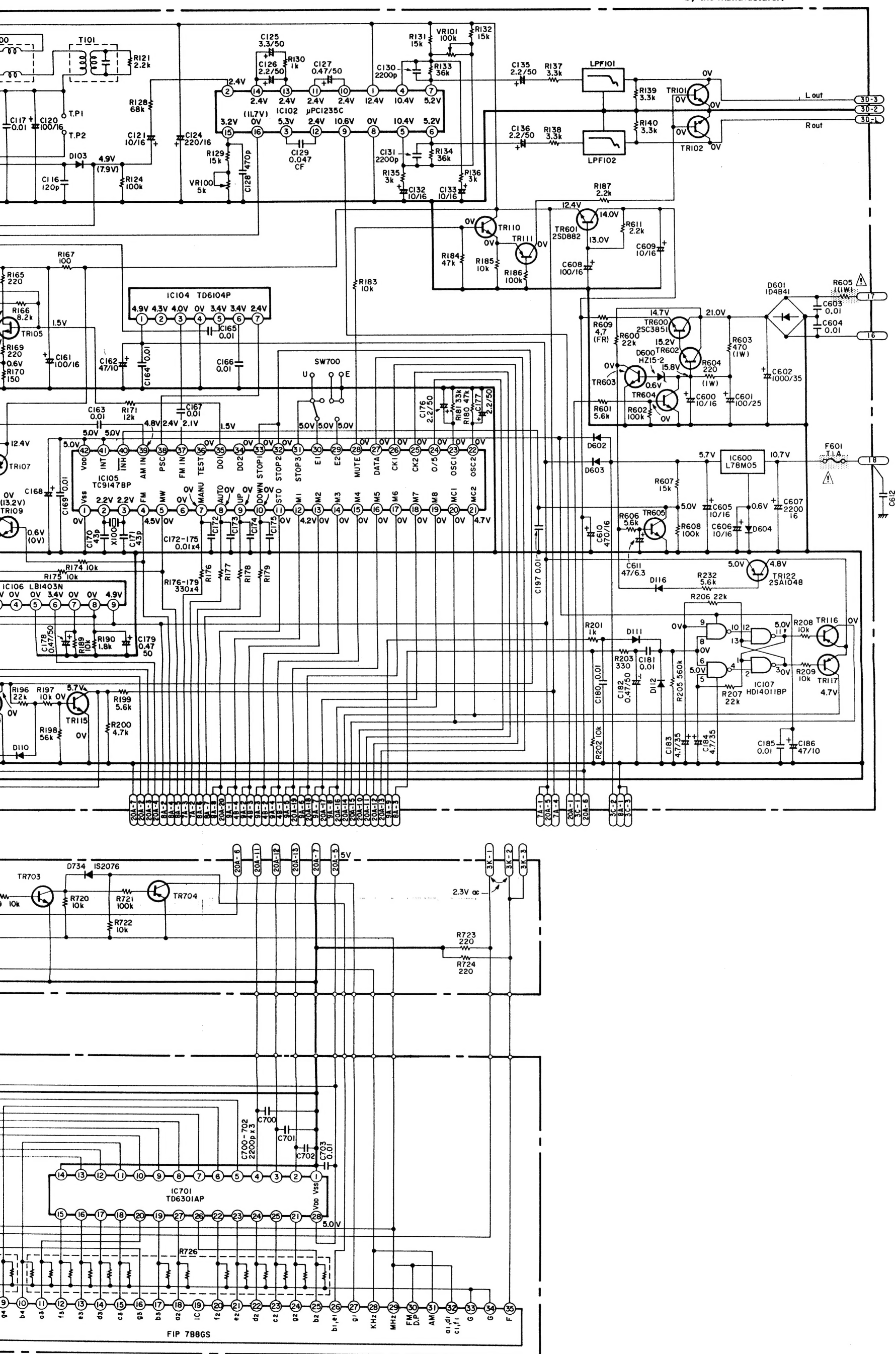
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SCHEMATIC DIAGRAM (for EP1)
TUNER SECTION

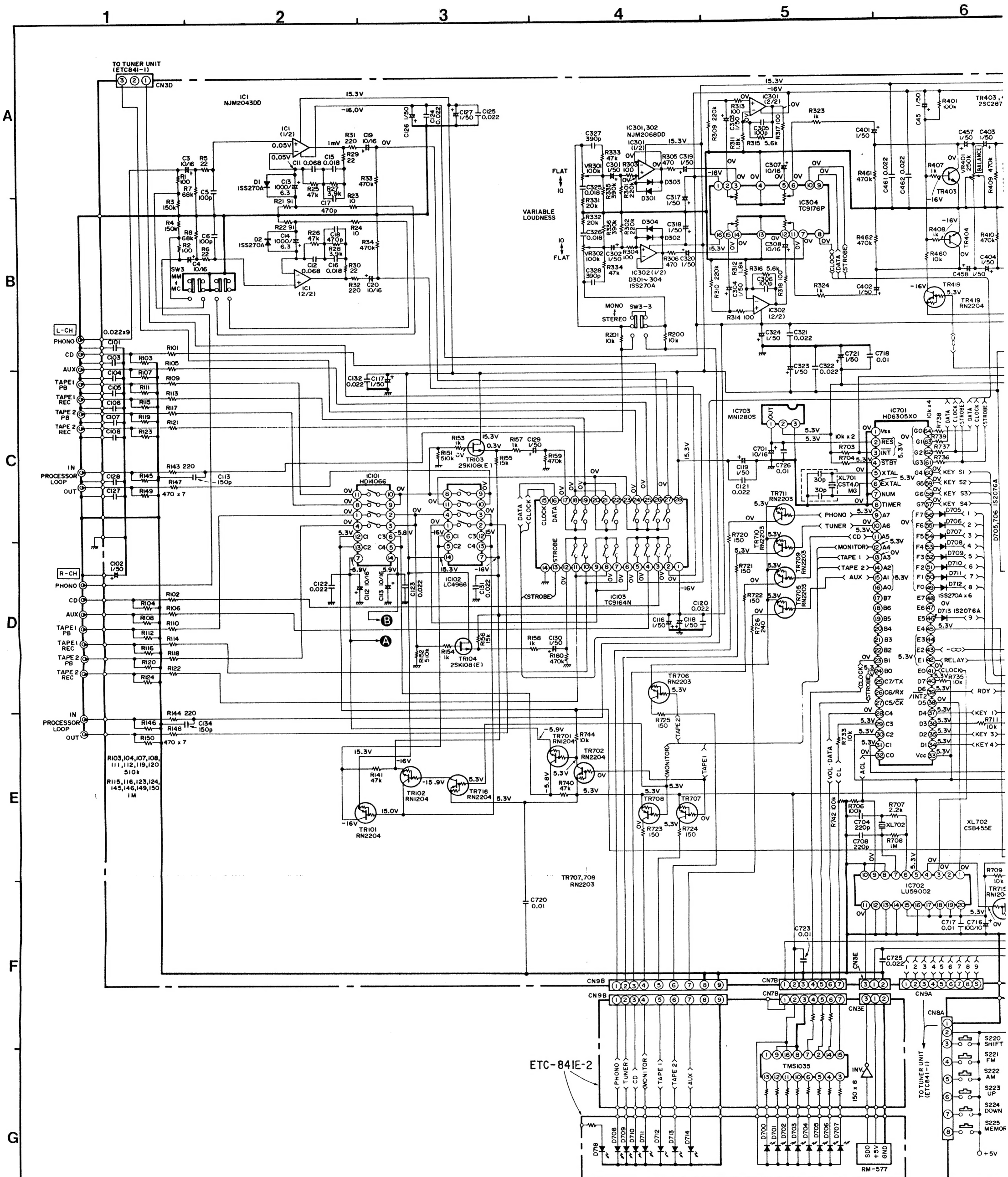


⚠ Means important safety item, which must be replaced, when necessary, by a part specified or meeting the specification by the manufacturer.



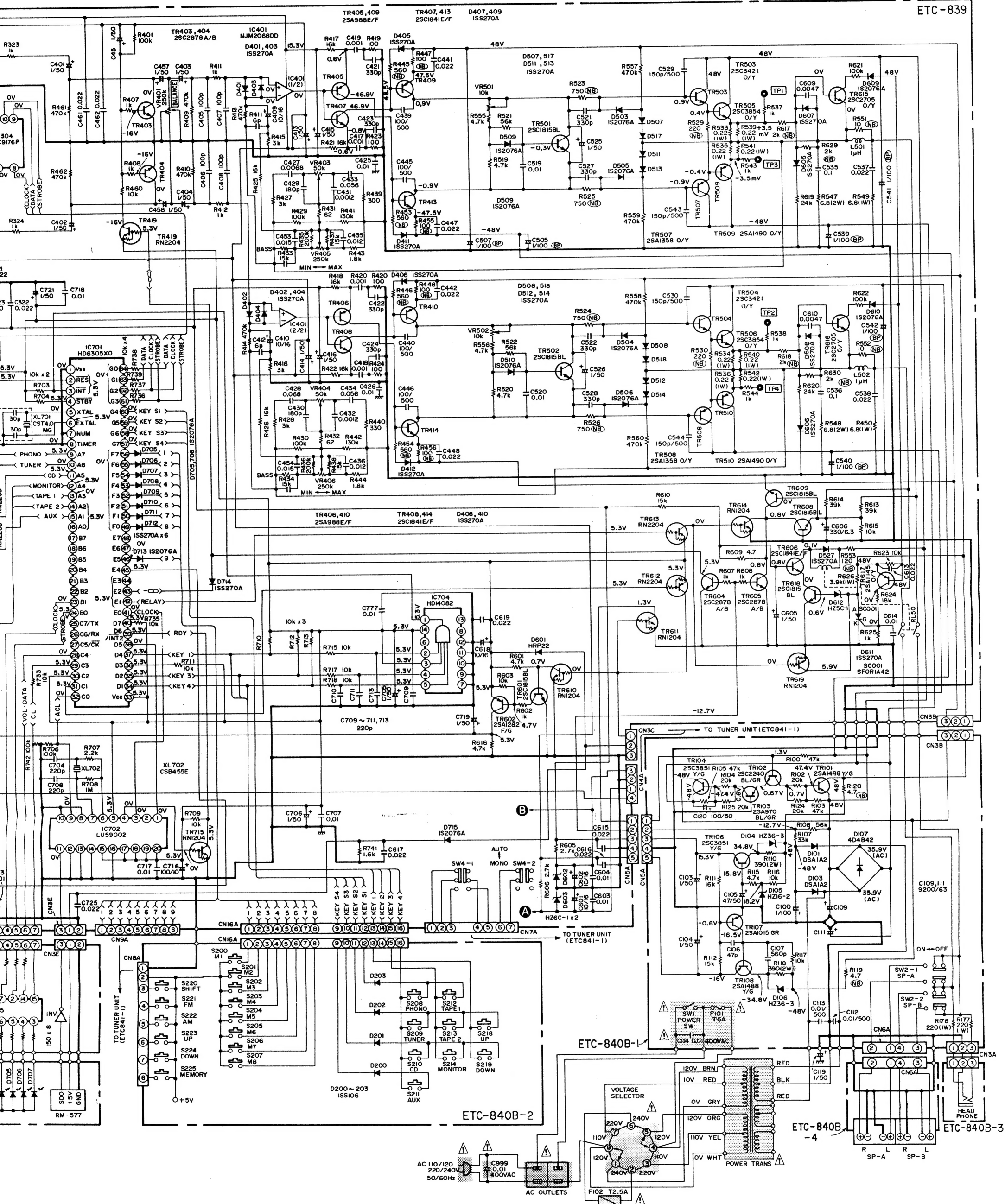
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SCHEMATIC DIAGRAM (for EP1)
AMP. RECT. SECTION



⚠️ Means important safety item, which must be replaced, when necessary, by a part specified or meeting the specification by the manufacturer.

ETC-839



NOTES:

ALL RESISTANCE VALUES IN OHM. K = 1,000 OHM, M = 1,000,000 OHM.

ALL CAPACITANCE VALUES IN MICROFARAD, P = MICRO-MICRO FARAD.

ALL CAPACITANCE VALUES IN MICROFARAD, μ MICRO MEGOHM, μ OHM.
EVERY VOLTAGES AND CURRENTS IS MEASURED AT NO SIGNAL INPUT CONDITION.

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